

CAN TOO MUCH SIMILARITY TO SELF BACKFIRE?
THE EFFECTS OF DIFFERENT LEVELS OF SIMILARITY ON
CHARITABLE DONATIONS

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How is charitable giving influenced by other donors' charitable giving? Do people give more in the presence of other donors who are similar to themselves? Most research suggests that individuals are positively influenced by others who are similar across a variety of behaviors. In the charitable giving contexts, people are more likely to donate (or donate more) to the same cause if others who are similar donate. Yet, prior research has paid little attention to potential non-linear effects of similarity on charitable giving. Is there a certain amount of similarity that is too much?

My dissertation investigates this research question through two different methodological approaches, a systematic literature review and an experimental study. The findings suggest the curvilinear effects of similarity on charitable giving (i.e. *self-other oversimilarity hypothesis*); that is, individuals are more likely to donate (and donate more) in the presence of other *generous* donors who are *moderately similar* to themselves. Yet, individuals are less likely to donate (and donate) less in the presence of other *generous* donors who are in *high* similarity to themselves. In other words, too much similarity between donors may actually backfire in charitable giving contexts when others give *generously*.

This dissertation consists of a brief overview of similarity (Chapter 1), a systematic literature review (Chapter 2), an experimental study (Chapter 3) and a

research proposal (Chapter 4). Chapter 1 in this dissertation identifies the importance of similarity in social relationships. Chapter 2 investigates the effects of similarity on charitable giving and identifies the literature gap. Chapter 3 attempts to fill the gap via developing and testing *self-other oversimilarity hypothesis*. It further offers practical implications for nonprofit fundraising practices on how to apply similarity between donors to motivate more funding. In order to provide additional empirical evidence that may contribute to theory and practice, and to address certain limitations of the current experimental study, Chapter 4 proposes a new research project to further test *self-other oversimilarity hypothesis* in the presence of a *stingy* donor.

Sara Konrath, Ph.D., Chair

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Chapter 1 INTRODUCTION: A BRIEF OVERVIEW OF SIMILARITY

Why do people tend to group together objects based upon shapes, colors, functions, forms and sizes? Why are people able to recognize and generalize a pattern among different things through examining the similarities? Why do people feel more attracted towards those who are perceived similar in certain characteristics, such as values, interests, or demographics? These common daily phenomena indicate that similarity plays an important role in shaping people's thinking, feeling and behavior.

Gestalt psychologists argue that individuals have an innate disposition to recognize patterns or classify objects based upon certain principles. One of the principles is the *principle of similarity*, that is individuals detect the similarity between two objects based upon their resemblances or overlaps (Wertheimer, 1923). People apply the *principle of similarity* not only to object categorization but also to human categorization in social relationships. Specifically, individuals categorize others who are perceived similar to the self as in-group members (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). Research also suggests that people tend to show higher favoritism and more attraction towards others who are perceived similar to the self (Donn Byrne, 1961; Dasgupta, 2004; Dion, 1973; Lott & Lott, 1965). Favoritism and attraction towards similar others may be due to a feeling of group belongingness (Dion, 1973; Lott & Lott, 1965).

Therefore, in order to better understand how similarity plays a role in human categorization and how this categorization affects individuals' thinking, feeling, and behavior, this chapter will first review the history of similarity in social relationships from philosophical, religious, and cultural perspectives. This chapter will also review

cross-disciplinary meanings and different cognitive psychological approaches of similarity. And then, this chapter will examine relevant theories and empirical evidence on similarity and social relationships in social psychology. The last section is an overall review of this chapter and my dissertation as a whole.

A Brief History of Similarity in Social Relationships

The Idea of Similarity in Philosophy

Aristotle's idea of similarity. The idea of similarity in social relationships was elaborated by Aristotle (approximately 300 BC) who claimed the law of similarity as an important component in Associationism, a theory that refers to the formation of ideas and sensation based upon various associations (Boeree, 2000). Specifically, Aristotle's law of similarity indicates that when two things are similar, people's thoughts of one thing tend to trigger the thoughts of another (Ross, 1906; Sorabji, 1972). For example, when people see one twin, they tend to think of the other. Here are a couple of examples described by Aristotle on how people's minds are shaped by the law of similarity: "Or again, by seeing a portrait of Simmias to call Simmias himself to mind" and "Does it not then happen in all these cases that recollection is derived at one time from similar and at another from dissimilar things" (Cope, 1875, p. 32).

Aristotle's idea of similarity also indicates that similarity leads to liking. In "Rhetoric," he says,

But since everything like and akin to oneself is pleasant, and since every man is himself more like and akin to himself than anyone else is, it follows that all of us must be more or less fond of ourselves...That is why we are usually fond of our flatterers, [our lovers,] and honour; also of our children, for our children are our own work...And since what is natural is pleasant, and things akin to each other seem natural to each other, therefore all kindred and similar things are usually pleasant to each other; for instance, one man, horse, or young person, is pleasant to another

man, horse, or young person. Hence the proverbs “mate delights mate,” “like to like,” beast knows beast,” “jackdaw to jackdaw,” and the rest of them.

--- (Aristotle, 2004)

The main idea of this passage is that there are two types of similarity that make someone perceived as more pleasant than others. These two types of similarity, according to Aristotle, are “akin” and “like.” “Akin” refers to a similarity in genus, and “like” refers to a similarity in kind. In sum, Aristotle’s description of similarity in “Rhetoric” may help to explain why people are more fond of someone who is akin or like themselves, that is due to similarity in genus (i.e. immediate family members) or similarity in kind (i.e. attitudes, races, interests).

Aristotle also uses the word “same” to describe oneness in numbers. For example, in the first chapter of Book VII in “Rhetoric,” Aristotle uses the word same to describe that “if A is the same as B but C is not, then A is not the same as C...If A and B are the same, then any accident of A is an accident of B and vice versa” (White, 1971, p. 178). This passage implies that if A and B are identical, whatever is true of the one stays true of the other. This concept of oneness, “same in numbers,” is different from the concept of “same in species,” and “same in genus.” Therefore, in order to better understand Aristotle’s idea of similarity, scholars suggest to distinguish the concept of similarity (sameness) from the concept of identity (oneness) in his work where the word same is used (White, 1971).

David Hume’s principle of resemblance. David Hume (1711-1776), was a Scottish philosopher, historian, economist, and essayist who is well known for his philosophical view of empiricism, skepticism, and naturalism. According to the most central doctrines of Hume’s philosophy, people’s minds consist of two types of mental

perceptions: impressions and ideas. Even though people may sometimes simply translate the distinctions of impressions and ideas to be distinctions between feelings and thinking, Hume argues that it is not easy to distinguish the two (Hume, 1888). According to Hume, there are three principles that play a role in allowing people to form new imaginations from the old ones: the principles of “resemblance” “contiguity” and “cause and effect”(Fieser, 2011). Hume’s principle of resemblance refers to the tendency of ideas to become associated if the objects resemble one another. Thus, Hume’s principle of resemblance also reflects Aristotle’s law of similarity in Associationism.

Aristotle’s law of similarity in Associationism also influences other philosophers, such as Tomas Brown (1778-1820) (Brown, 1805) and Alexander Bain (1818-1903) (Bain, 1873), who incorporate similarity as one of the important principles of their extended work of Associationism.

The Idea of Similarity in Religions

A Christian View of Similarity. Bible Scriptures speak of the significance of similarity in how the world should be and how people should behave. In the beginning of the *Old Testament*, God created the world in seven days and let everything on earth, both plants and living creatures, sprout based upon the *principle of similarity*, “each according to its kind,” (*Genesis 1: 11-25*). And then God created man according to his own image, as Bible Scriptures say, “make man in our (God’s) image, after our (God’s) likeness” (*Genesis 1:24*). Due to the fact that God created human-beings according to his own image, he expected human-beings to behave like him as well. For example, the Scriptures say, “So try to be like God, because you are his own dear children. Love others as Christ has loved us...” (*Ephesians 5:1-2*) In addition, Bible Scriptures offer numerous examples

indicating that a good Christian should say what God would say and do what God would do, such as in “Whoever says he abides in him ought to walk in the same way in which he walked”(John 2:6), “if you love me, you will keep my commandments” (John 14:15), and “As for me, I shall behold your face in righteousness; when I awake, I shall be satisfied with your likeness” (Psalm 17:15). In sum, a Christian view of similarity reflects a simple idea that since we were created in God’s own image after his likeness, good Christians should talk and behave like God.

A Jewish View of Similarity. The Hebrew Bible (*Tanakh*) also speaks of the idea of similarity in the same way as the Christian Bible does. Specifically, the Hebrew Bible Scriptures indicate that God created mankind according to his image and blessed them with His love (*Genesis 1:24, 17:3-8*). In turn, God also commanded mankind to love and worship Him (*Exodus 20:3*) and imitate God’s love for each other (*Leviticus 19:18*). Thus, a Jewish view of similarity is very similar to a Christian view.

A Muslim View of Similarity. The idea of similarity is reflected as following the moral leader, Muhammad, in Islam. Muslims believe that Muhammad is a messenger of God, who represents a comprehensive body of moral guidelines for them to follow in every aspect of life (Campo, 2009, p. 216). If people behave against the fundamental moral qualities in Islam (e.g. justice, forgiveness, righteousness, kindness, honesty and pity), they will earn vices (p.215). In sum, a Muslim view of similarity indicates an idea that Muslims should assimilate to Muhammad in their life practice.

A Buddhist View of Similarity. The idea of similarity is also embedded in one of the fundamental concepts of Buddhism, *Samsara*, which refers to the “circle of suffering and rebirth” (Laumakis, 2008, p. 75). Specifically, Buddhists believe that all human

beings exist in a circle of repeated birth, mundane existence, and dying again (Trainor, 2004, p. 58). There were six different realms of mundane existence, including three good realms (heavenly, demi-god, human) and three evil realms (animal, ghosts, hellish) (Crawford, 2004). The realms of existence for the “next” life depend upon how people practice in the “previous” life; that is, people would enter a good realm in the next life circle if they practice “good” in line with Buddhist doctrines (e.g. no killing, loving-kindness and compassion, meditation, and renunciation of craving and attachment) (Gethin, 1998, pp. 27-28, 73-74). In short, a Buddhist view of similarity is reflected as a principle to determine mundane existence in the life circle; that is, practicing “good” in the current life leads to good realms in the next life whereas practicing “bad” in the current life leads to bad realms in the next life.

The Idea of Similarity in Cultural Assimilation in History

Similarity and Cultural Assimilation. The idea of similarity is also reflected in cultural assimilation in human history. Cultural assimilation refers to a movement where individuals or groups with different ethnic heritages form a new cultural domain of a society (Pauls, 2008). A cultural domain is defined as a set of people that are perceived as the same type due to certain shared attributes (e.g. languages, cultural rituals, habits, races, ethnicity) or certain linked relations (e.g. past experiences, memories) (Borgatti, 1999). Cultural assimilation normally occurs when immigrants move into a new country, facing a possible loss of original cultural aspects, and perhaps all of their ethnic heritage. Yet, in the process of cultural assimilation, immigrants may gradually form a new cultural domain, and this process is normally influenced by their original class, racial and ethnic heritages, as well as their common experiences, memories, and sentiments (Parisi,

Cecconi, & Natale, 2003). For example, in the history of the United States, there were roughly 24 million immigrants between 1880 and 1920, earning America the title “melting pot” (McDonald, 2007, p. 50). These immigrants gradually formed their new cultural groups. The clustering of these groups were originally more bonded to groups who shared similar characteristics or common experiences, such as language, socioeconomic class, spatial concentration, etc. (Waters & Jiménez, 2005). Examples include Chinatowns, and “Little Italy” in New York and San Francisco. In other words, in the process of cultural assimilation, similar characteristics and common experiences are important factors in shaping the new cultural life.

Cross Disciplinary Meanings of Similarity

As an important construct, similarity has received much attention in different fields and the concept of similarity has been defined in different ways. For example, in Mathematics, similarity is defined in the term, “geometrical similarity,” which describes two geometrical objects sharing the same shape, or is defined in the term, “matrix similarity,” which describes matrices representing the same linear operator under possible bases (Beauregard, 1973; Yale, 2014). In Engineering, similarity is defined in the term, “similitude,” which refers to the geometric, kinematic and dynamic likeness between two or more engineering models (Kline, 2012). In Computer Science, similarity is defined in the term, “semantic similarity,” which refers to a metric where a set of terms are similar in their meaning or semantic content (Harispe, Ranwez, Janaqi, & Montmain, 2015). And in Psychology, similarity refers to psychological feelings of likeness (Tversky, 1977). Even though the concept of similarity has been defined in a variety of terms across

disciplines, a common element can be found across these cross-disciplinary definitions, that is likeness or sameness.

Even though literature indicates that individuals tend to categorize items and people based upon the *principle of similarity*, the latter process, people categorization, is more complex. In this complex process, people may develop emotional attachments or bonds to those who are perceived as more similar, which in turn can increase feelings of group belongingness. Research suggests these emotional bonds to certain groups are important aspects of group cohesion (Forsyth, 2018) and the feeling of group belongingness can be self-categorized by individuals without any formal or informal agreement from other group members (Hogg & Terry, 2000; Turner et al., 1987). For example, a female may self-categorize herself in the same gender group with other females, and this self-categorization does not need any agreement between herself and the other females.

Different Cognitive Psychological Approaches of Similarity

Cognitive psychologists suggest three generations of commonly used approaches of similarity. Each later generation of approaches has been developed to address the limitations of the previous generation of approaches.

Mental Distance Approaches

In the 1960s, *mental distance approaches*, were developed to study similarity. These approaches posited that similarity of concepts can always be measured by the distance between concepts (Shepard, 1962). Based upon these approaches, people are able to mathematically calculate the similarity levels between two things from data using certain techniques, such as multidimensional scaling and latent semantic analysis

(Landauer & Dumais, 1997; Shepard, 1962). Even though this generation of approaches acknowledges that concepts have multiple dimensions, its central idea of measuring similarity by distance fails to acknowledge that similarity between concepts may be unidirectional. For example, it is more common to hear the phrase “like father like son” than “like son like father,” which represents the idea that people’s assessment about the similarity of two concepts is not always bidirectional, but rather unidirectional, because the base that people normally choose to compare with, is different. In the example above, the distance between “father” and “son” are the same. However, the phrase “like father like son” represents a comparison between father and son using father as the comparable base, which is perceived to be more appropriate. In contrast, “like son like father” represents a comparison using son as the base, which is less appropriate. Another example is that a square is perceived to be a rectangle but a rectangle is not perceived to be a square. Thus, the unidirectional comparison suggests that comparing everything by mental distance may not always be appropriate, and it contrasts with the central idea of mental distance approaches, that the similarity between two things or concepts are always comparable in both directions.

Featural Approaches

In the 1970s, cognitive psychologists developed *featural approaches* in order to address the limitations of *mental distance approaches*. Recognizing that psychological similarity may be unidirectional, *featural approaches* suggest that people’s concepts are formed in comparing the properties of items with lists of features. Specifically, people may categorize an item as similar to other items only when the features of the item share commonalities with the lists of features in comparison. The level of similarity is

positively associated with the number of commonalities and the salience of commonalities, and negatively associated with the number of differences and the saliences of differences with the lists of features. Yet, featural approaches have been criticized for relying on a simple assumption that commonalities and differences are independent of each other (Gentner & Markman, 1997).

Structural Approaches

In the 1990s, *structural approaches* were developed, which claim that commonalities and differences are not psychologically independent from each other. For example, high school students and college students can be perceived as similar because they are both students, yet they can be perceived as different because of different levels of education. Similarities and differences in this example are not independent of each other. The reason is that identifying differences first requires finding a commonality between the pair, which refers to an *alignable difference*. In contrast, another type of differences is called *nonalignable difference*, if the difference is independent from similarity. Research suggests that alignable difference plays an important role in people's assessment of similarity (Gentner & Markman, 1997). Therefore, *structural approaches* emphasize examining the relationship between the commonalities and the differences since both are important factors for people to determine similarity between things and concepts.

In short, it is important to be aware of limitations of each generation of approaches and understand that there is no unique approach that can fully explain how similarity is perceived since it is a complex process. In order to better understand this

complex process in social relationships, this chapter will next review relevant theories and empirical evidence in social psychology.

A Review of Similarity and Social Relationships in Social Psychology

Similarity in social psychology contexts refers to how closely people's attitudes, values, interests, personality traits, and demographic characteristics are alike. In fact, research in social psychology suggests that similarity affects people's feelings and decision making in a variety of contexts, such as attraction in romantic relationships (Tidwell, Eastwick, & Finkel, 2013), friendship intensity (Selfhout, Denissen, Branje, & Meeus, 2009), and agreement between supervisors and subordinates (Kacmar, Harris, Carlson, & Zivnuska, 2009). There are a few important theories that offer useful insights regarding the role of similarity in social relationships, which I will review below.

Social Identity Theory and Similarity

Social Identity Theory, developed by Henri Tajfel and John Turner in the 1970s and 1980s, predicts that in order to maximize optimal distinctiveness of group identity, individuals differentiate their feelings and behaviors towards others (members of in-group and out-group) based upon perceived in-group identity (Tajfel & Turner, 1979; Turner & Oakes, 1986). *Social Identity Theory* implies that similarity plays an important role in affecting how individuals identify themselves as belonging to certain groups but not to others, and in turn, group identity affects individuals' similarity to in-group members (Brown, 2000). Simply speaking, people are more likely to identify others with commonalities as their in-group members, and in turn, people with the same group identity (group membership) are usually perceived to be similar.

One fundamental assumption in *Social Identity Theory*, optimal distinctiveness, is that individuals are intrinsically motivated to achieve positive distinctiveness, that is individuals strive for a positive self-concept (i.e. self-esteem) (Tajfel & Turner, 1979). Based upon this fundamental assumption, individuals may react in two ways. First, individuals may compromise their self-interests in order to maximize the optimal distinctiveness of an in-group identity, and this point has been extended further in Self-Categorization Theory (Turner et al., 1987), which is discussed below. For example, a multinational study found that people were willing to make extreme sacrifice (e.g. to die) for groups in which members shared core characteristics and felt the group was “family like” (Swann Jr et al., 2014). Second, if the optimal distinctiveness of an in-group identity is unachievable, individuals may disassociate themselves from this in-group identity (Turner, 1978). For example, research suggested that if members’ self-interests could not reconcile with the group’s value (e.g. benefiting the self will harm the group), group disloyalty would occur which was manifested as members leaving the group (Zdaniuk & Levine, 2001).

In addition to optimal distinctiveness assumption, another important concept in *Social Identity Theory* is in-group favoritism, which describes that individuals usually have tendencies to treat in-group members, those with the same group identity, more preferentially than their out-group members, those without the same group identity (Ahmed, 2007; Roccas & Schwartz, 1993). Empirical evidence suggests that various kinds of similarity can generate in-group favoritism. The types of similarity include coincidental similarity (i.e. induced membership by some arbitrary rules, such as flipping a coin, see Rabbie & Horwitz, 1969), demographic similarity (i.e. gender, race, ethnicity,

see Sidanius, Pratto, & Rabinowitz, 1994), and attitudinal similarity (i.e. values, see Duckitt, 2001). However, similarity does not always lead to a higher likelihood of in-group favoritism. For example, Jetten, Spears, and Manstead (1998) found that in-group favoritism was high in “close” (homogeneous) and “distant” (heterogeneous) cases and low in extremely similar or dissimilar cases. In other words, both extremely high similarity and dissimilarity fail to lead to more in-group favoritism.

Self-Categorization Theory and Similarity

Self-Categorization Theory was developed by social psychologists, John Turner and his colleagues (Turner, 1985; Turner et al., 1987), as a cousin theory of *Social Identity Theory*. The difference between the two theories is that *Social Identity Theory* focuses more on intergroup relationships while *Social-Categorization Theory* focuses more on intragroup relationships, which refers to the relationship within the group (Hornsey, 2008). *Self-Categorization Theory* is based upon an approach that is similar to cognitive psychologists’ structural approaches, which emphasizes comparing differences and commonalities at different structural levels. According to *Self-Categorization Theory*, individuals identify “the self” by comparing it with others at different structural levels. The lowest level is the personal level, where individuals define a personal identity, “I.” The upper level is the group level, where individuals define the self as a member of certain groups, as group and social identity, “we.” And the highest level is humans’ level, where individuals identify themselves in comparison with non-human/non-animals. The identities at each level are not independent but rather dependent on each other to jointly identify the concept of “the self” (Turner, 1985; Turner & Oakes, 1986).

Research suggests that depersonalization or self-stereotyping normally occurs when individuals tend to perceive themselves as “ interchangeable exemplars of a social category” rather than as “unique personalities defined by their differences from others” (Turner, 1985, pp. 77-122). With the process of depersonalization, people may gradually adjust their behavior according to group and social norms. Empirical evidence suggests that depersonalization occurs when one’s group identity is perceived as salient, because it enhances in-group favoritism, thus leading individuals to behave in the way that in-group members would behave (Bergami & Bagozzi, 2000; Schubert & Otten, 2002).

In short, the role of similarity is important in Self-Categorization Theory in two ways. First, it elaborates that depersonalization depends upon individuals’ perceived salience of different group categories. If the salience of similarity is low, similarity may not always lead to a higher likelihood of in-group favoritism or in-group behavior assimilation. Second, Self-Categorization Theory suggests that once a group identity is distinguished by common characteristics (i.e. gender, race, ethnicity), the subjective norms and expectation of that group will strongly affect individuals’ identification of “the self,” thus affecting individuals’ attitudes and behaviors (Hornsey, 2008, p. 209). Thus, *Self-Categorization Theory* presents a more thorough explanation of the role of similarity in intragroup relationships by highlighting the salience of identity at different levels of “the self” concept, compared to Social Identity Theory, which focuses more on intergroup relationships.

Similarity Attraction Theory and Similarity

Similarity Attraction Theory was developed by Byrne in 1961, and the central idea of this theory is that attitudinal similarity leads to higher interpersonal attraction

among people (Donn Byrne, 1961). According to Montoya, Horton, and Kirchner (2008)'s review, a positive similarity-attraction relationship exists in various forms including attitudinal similarity, personal trait similarity, and demographic similarity. Does similarity always lead to more attraction? The majority of published research finds supportive evidence for a positive relationship between similarity and attraction on different types of similarity, such as membership similarity (Grant, 1993; Simons, Berkowitz, & Moyer, 1970), attitudinal similarity (Simons et al., 1970; Smith, 1998), demographic similarity (i.e. gender and life stage), and personality similarity (Smith, 1998). However, a few studies find counter evidence on similarity in negative personal traits. For example, studies found that people who shared *negative* similar traits were *less* likely to feel attraction towards each other (Barbuto Jr & Gifford, 2012; Novak & Lerner, 1968). Also, Snyder and Endelman (1979) found a curvilinear relationship between similarity and attraction through manipulating different levels of similarity (low, moderate, and high) and found that high similarity generated aversion feelings instead of attraction feelings.

Additionally, it is possible that whether the relationship between similarity and attraction is positive or not may depend upon different types of similarity. Specifically, research finding a positive relationship has found that attraction is most likely to result from similarity in attitudes, interests, opinions, values, religiosity, etc. For example, a study based on a college student sample found that participants rated others with similar attitudes more positively than those with dissimilar attitudes (Byrne et al. 1971). Another study on community participants found that people reported higher liking towards those who shared the most commonalities in interests and opinions (Griffitt & Veitch, 1974).

Also a study of newly married couples found that they reported higher relationship quality, such as more happiness and satisfaction, when the partners' values, religiosity, and political attitudes were similar to the self than when they were dissimilar (Luo & Klohnen, 2005).

The similarity-liking assumption has also been confirmed in decision making at organizational levels. For example, similarity between interviewees and interviewers positively affects hiring decisions (Lin, Dobbins, & Farh, 1992) and similarity between companies also affects the likelihood of merging the companies (van Oudenhoven & de Boer, 1995). Consequently, individuals may treat those they like differently from those they do not like. Empirical research suggests that people tend to justify or forgive unfavorable behaviors of others they like compared to those they dislike. For example, Veitch and Piccione (1978) found when participants witnessed teachers "shock" a confederate, they attempted to justify the behavior of teachers they liked as opposed to the teachers they disliked.

However, similarity may not always lead to higher attraction. For example, research has found that similarity in negative personal traits does not lead to more interpersonal attraction (Novak & Lerner, 1968). In fact, different types of similarity not only affect the likelihood of interpersonal attraction but also affect the degree of interpersonal attraction. For example, empirical evidence suggests that the similarity effect is weaker in personality traits (i.e. introvert vs extrovert) than it is in attitudes (i.e. political view) (Montoya & Horton, 2004), and the similarity effect is less influential in peripheral attitudes (i.e. attitudes about television shows) compared to central attitudes (i.e. religious convictions) (Donn Byrne, London, & Griffitt, 1968).

Why are similar people more likely to connect and develop higher interpersonal attraction? There are a few possible reasons. First, similar people may have more opportunities to meet through being involved in activities driven by same interests (i.e. club members), or going to the same places due to group obligations (i.e. students going to school) (Werner & Parmelee, 1979). Additionally, similar people may be more likely to meet each other through their common friends or mutual relationships (Kalmijn, 1991). Secondly, according to the *Matching* hypothesis, people are more likely to be matched and attracted by those who are perceived as similar in physical appearance (Sprecher & Hatfield, 2009). Empirical evidence has confirmed the *Matching* hypothesis that people tend to be more attracted to, want to date, or form a long-lasting relationship with someone who is of a similar level of physical attractiveness (Critelli & Waid, 1980; Murstein, 1972).

Kinship Literature and Similarity

As Aristotle suggested, there are two different types of similarity, "like" and "akin." In addition to the research on likeness in social relationships, it is also important to review the kinship literature to see how similarity in kinship affects social relationships.

The term kinship was first used by anthropologists to describe the web of social relationships among humans in all society. As Robin Fox says, "the study of kinship is the study of what man does with these basic facts of life-mating, gestation, parenthood, socialization, siblingship, etc" (Robin, 1967, p. 30). In the literature on kin recognition, researchers focus on investigating individuals' abilities to distinguish between close genetic kin and non-kin by the cue-based mechanisms, thus behaving differentially

towards kin and non-kin (Hamilton, 1964). *Genetic Similarity Theory* has been developed to incorporate the kin selection theory of altruism based upon genetic similarity, that is people are more likely to be altruistic towards those genetically similar to them (Rushton, Russell, & Wells, 1984). Extending *Genetic Similarity Theory*, empirical research has found that attitudinal similarity also serves as a heuristic cue for kinship recognitions, and consequently, people tend to behave more prosocially to others who are perceived to be high in attitudinal similarity (Park & Schaller, 2005). In short, people may behave more generously to those who have been identified or interpreted as kin instead of non-kin.

Summary

Taken together, similarity is a key principle that heavily influences individuals' knowledge and behavior. As early as 300 B.C., the idea of similarity in shaping people's social relationships was theorized by one of the most influential philosophers, Aristotle, and his idea of similarity has been accepted and further developed by many thinkers. The core element of similarity, sameness or likeness, has been reflected not only in philosophical views but also in different religions, in cultural assimilation, and in different cross disciplinary definitions.

According to relevant theories and empirical evidence of similarity in social psychology, individuals tend to categorize others based upon similarity between others and the self, therefore affecting their feelings and behaviors towards others (i.e. liking, attraction, and prosocial behavior). Most studies, both theoretical and empirical, suggest the relationship between self-other similarity and individuals' reactions to others (i.e. feelings and behavior towards others) is based upon the contexts.

Based upon the review of similarity, much is known about the positive effect of similarity in social relationships. However, a few empirical studies have found a negative effect of similarity in social relationships. Yet relatively little is known about why and under what conditions this occurs.

In order to better understand different effects of similarity on individuals' reactions to others in social relationships, my dissertation will investigate the effects of self-other similarity at different levels in a specific prosocial context, charitable giving. Through two different methodologies, a systematic literature review (Chapter 2) and an experimental study (Chapter 3), my dissertation will develop and test *Self-Other Oversimilarity Hypothesis*, which aims to add new empirical evidence to better understand different similarity effects in social relationships, specifically in a charitable giving context. The last chapter (Chapter 4) of my dissertation will summarize both studies and propose a new study that helps address certain limitations of the experimental study in Chapter 3.

Chapter 2 THE EFFECTS OF DIFFERENT LEVELS OF SIMILARITY ON CHARITABLE GIVING IN DONOR-DONOR DYADS: A SYSTEMATIC LITERATURE REVIEW

Charitable giving, as a kind of prosocial behavior, serves as an important means for individuals to make a social impact, enhance their self-esteem, and connect with others (Havens, O’Herlihy, & Schervish, 2006). In 2016, nonprofit organizations in the United States received a total amount of \$390 billion in charitable donations, of which individuals contributed the largest proportion, approximately 72 percent (Giving USA, 2017). Given this fact, it is important for both scholars and practitioners to better understand how and why people donate to nonprofit organizations.

Research has identified eight key mechanisms that influence charitable giving, including awareness of need, solicitation, costs and benefits, altruism, reputation, psychological benefits, values, and efficacy (Bekkers & Wiepking, 2011). In addition, research has also identified different motives, such as other-oriented motives (e.g. altruism) and self-oriented motives (i.e. egoism) that inspire charitable giving (Konrath & Handy, 2017).

Similarity, as a psychological construct, plays an important role in affecting charitable giving through these mechanisms. For example, research has found that people are more likely to comply to a solicitation request made by other people with the same religious beliefs (Yinon & Sharon, 1985). In addition, research has also found that people are motivated to be more empathetic and altruistic towards similar others, thus giving more to them (Andreoni, Rao, & Trachtman, 2017). What’s more, people are more likely to follow the giving behavior of others of the same gender (Croson & Shang, 2005).

Does similarity always lead individuals to give more? In fact, research suggests mixed findings to this question; that is, people's giving can be positively or negatively influenced by other donors' who are perceived as similar (Croson & Shang, 2008; Eckel, Grossman, & Johnston, 2005; Falk, Fischbacher, & Gächter, 2002). However, is there a level of similarity that is too high, and that negatively affects charitable giving? In order to better understand whether individuals would give *more* or *less* in the presence of other donors depending on how similar the other donors are perceived to the self, this paper systematically reviews the prior literature to code and synthesize the potential effects of *self-other similarity* on charitable giving in donor-donor dyads.

I conducted this systematic literature review based upon the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA), which was developed for researchers to ensure the transparency, comprehensiveness, and future replications of review studies (Moher, Liberati, Tetzlaff, Altman, & Group, 2009). Following the PRISMA 2009 checklist (Moher et al., 2009), I structure the rest of the paper as follows: First, I identified the rationale and objective of this systematic literature review. Then, in the method section, I reported the criteria and procedures used for searching, selecting, and identifying eligible studies, with a discussion on their rationale and limitations. In addition, I discussed the data items and measures coded in this review. In the result section, I first reported the numbers of studies at each stage of searches, screening, eligibility assessment, and eligible studies identification, with reasons for exclusions. Then, I reported the coding results of the eligible studies, and a summary and synthesis of the results. Lastly, in the discussion section, I interpreted the results,

discussed the contributions and limitations of this study, and proposed directions for future studies based upon the literature gap identified in this review.

Rationale and Objective

Social Influence and Prosocial Behavior

Factors that affect individuals' prosocial behavior can be categorized into two groups: *internal* factors (e.g. demographics, personality, social status, mood, knowledge, ability, resources, and previous experiences) and *external* factors (e.g. solicitation methods, and influences of other people) (Guy & Patton, 2013).

Social influence refers to a phenomenon that people's emotions, opinions and behaviors are affected by others (Cialdini & Goldstein, 2004; Kelman, 1958). Social influence can occur in different contexts, such as marketing (Burnkrant & Cousineau, 1975), social media (Gass & Seiter, 2015), group decision making (McCauley, 1989), technology acceptance (Venkatesh & Morris, 2000), message-based persuasion (Wood, 2000), and prosocial behavior (e.g. volunteering) (Moseley et al., 2017).

In a context where prosocial reactions are needed, social influence can be seen in various forms, such as peer pressure, social norms, the leader effect, and so on (Cialdini, 2001a; Cialdini & Goldstein, 2004). Specifically, individuals may feel pressured to behave a specific way in order to meet the expectations of others. For example, individuals' altruistic feelings (e.g. empathic emotions) and altruistic behavior (e.g. helping) are affected by the perceived expectations of others in different contexts, such as peer expectations about kindness and helping behavior (Schwartz, 1968) and expectations of known others on blood donations (Pomazal & Jaccard, 1976). Additionally, individuals' prosocial behavior may also be influenced by perceived norms in a given

context (Schwartz, 1977). For example, individuals are motivated by social norms regarding environmental conservation while staying in hotels (Goldstein, Cialdini, & Griskevicius, 2008). Moreover, individuals' prosocial behavior is also influenced by superior others. For example, group leaders' decision making in charitable giving strongly affects followers' charitable giving (Czap & Czap, 2011). Another example is that group leaders' prosocial behavior of sacrificing personal interest for the collective welfare of the team motivates people to be more prosocial (De Cremer, Mayer, Van Dijke, Schouten, & Bardes, 2009). Furthermore, individuals are more likely to follow giving behaviors of other people who are ranked higher in social status (Kumru & Vesterlund, 2010).

In a charitable giving context, social influence can occur in different interpersonal dyads. In *solicitor-donor* dyads, social influence occurs when people's charitable giving is influenced by solicitors (Yinon & Sharon, 1985); in *recipient-donor* dyads, social influence occurs when people's charitable giving is influenced by recipients (Nadler, 1987); and in *donor-donor* dyads, social influence occurs when people's charitable giving is influenced by other donors (Croson & Shang, 2005).

Different Effects of Social Influence in Donor-Donor Dyads

This paper focuses on donor-donor dyads, because much less attention has been paid to donor-donor dyads compared to donor-solicitor and donor-recipient dyads and there is a lack of overarching theoretical framework to provide a comprehensive understanding of different empirical evidence in these dyads.

Research has identified different factors that could affect social influence on charitable giving in donor-donor dyads, including personal attributes (e.g. gender) (Shang

& Croson, 2009), contextual features (e.g. situation ambiguity) (Martin & Randal, 2008), authority (e.g. leadership) (Czap & Czap, 2011), and others' behavior (e.g. others' giving amount) (Abrams, 1998). The direction and the strength of other donors' social influence on individuals' charitable giving depends on how these factors are perceived by individuals. For example, the direction of social influence on individuals' giving depends on how others' giving amount is perceived by individuals (e.g. reasonableness, relevance, importance, etc.). Specifically, when individuals perceive others' giving amount as reasonably generous or stingy, they are more likely to follow this behavior to give either generously or stingily (Becchetti, Pelligra, & Reggiani, 2017; Katz & Malul, 2015; Reingen, 1982). In other words, a *positive upward* social influence occurs when a *generous* giving amount from others is perceived as reasonable, thus motivating individuals to give more. And a *positive downward* social influence occurs when a *stingy* giving amount from others is perceived as reasonable, thus leading individuals to give less (Croson & Shang, 2008). In contrast, a *negative* social influence can occur when others' giving amounts are perceived as unreasonably high or low. For example, individuals may contrast their own behavior to an unreasonably generous donor by donating less (Croson & Shang, 2013).

In addition, in donor-donor dyads, the direction and strength of other donors' social influence on individuals' charitable giving also depends on how similar individuals perceive other donors as compared to the self (i.e. *Self-Other Similarity*). Specifically, research suggests that a positive social influence is more likely to occur when individuals are aware of similar attributes or characteristics of others to the self. For example, individuals follow others' giving behavior when others are perceived as similar to the self

in personal attributes (e.g. gender) (Croson, Handy, & Shang, 2010), in social characteristics (memberships of a social group, residents) (Reingen, 1982; Shang, Croson, & Reed, 2007; Shang, Reed, & Croson, 2008) or in temporarily induced identities (e.g. group memberships temporarily assigned by an arbitrary rule in experiments) (Fischbacher, Gächter, & Fehr, 2001).

In contrast, the crowding out literature suggests that a negative social influence is more likely to occur between private donations and government funding; that is, individuals donate less to a nonprofit organization that receives an increasing amount of government funding (Abrahams & Schmitz, 1984; Brooks, 2000).

Experimental studies have been conducted to test the crowding out phenomenon in individual-individual donor dyads and they have identified two possible reasons for this result: altruism and a psychological feeling of substitution. The first reason, altruism, suggests that if individuals are motivated by pure altruism, they would only be concerned about whether the recipients' needs have been met, instead of caring about who provides the support. Therefore, a crowding out phenomenon may occur when the recipients' needs have already been met by other donors, thus leading individuals to feel that it is not necessary to donate (Andreoni, 1993; Bolton & Katok, 1998). Another reason, the psychological feeling of substitution, suggests that if individuals perceive that the other donor is using the money from the self to make the donation, the individuals may feel that they themselves have already donated, consequently feeling there is no need to donate again (Eckel et al., 2005).

In the crowding out literature, the theoretical framework of altruism has received much attention as a major explanation for the negative social influence of government

funding on individuals' charitable giving (Andreoni, Harbaugh, & Vesterlund, 2010). However, the theoretical framework of altruism has been developed to explain giving motives specifically in donor-recipients dyads. Besides, other factors, such as the psychological feeling of substitution, may also lead to fewer donations from individuals when others give more in an individual-individual donor dyad. In this systematic literature review, I will investigate the theoretical framework of *identity* (see theoretical framework discussion in Chapter 1) via a core psychological construct, similarity, in social influence in donor-donor dyads that can drive individuals to donate less.

The Effects of Similarity on Charitable Giving

In *donor-solicitor* dyads, similarity plays a role in provoking more donations from individuals when solicitors are perceived as attractive due to similarity to the self. For example, research has found that people are more likely to respond to a solicitation request made by others who are perceived as similar and attractive (Bekkers, 2010; Guéguen, Pichot, & Dreff, 2005).

In *donor-recipient* dyads, similarity has also been found to play an important role in creating emotional responses towards recipients who are similar to the self. For example, people give more to recipients who are similar to the self, because they feel more empathy for these recipients (Batson, Lishner, Cook, & Sawyer, 2005; Cialdini, Brown, Lewis, Luce, & Neuberg, 1997).

However, it is less clear how similarity plays a role in *donor-donor* dyads since it receives little attention from scholars and no research attempts to investigate different empirical findings under an overarching theoretical framework. On the one hand, when individuals feel that they are *moderately similar* to other donors, they are more likely to

follow others' behavior and donate *more* (Shang & Croson, 2009). On the other hand, a perception of “oneness” is created when individuals feel *extremely similar* to other donors (e.g. using the same resource to donate), and this “oneness” perception may cause a substitution feeling of others' donations as an individual's own donation, thus leading individuals to donate *less* (Eckel et al., 2005).

In order to better understand how different levels of self-other similarity affect charitable giving, I conducted a systematic literature review to identify and code eligible studies at different levels of self-other similarity. The coding results were synthesized in order to reconcile mixed findings, to identify gaps in the literature, to suggest directions for future research, and to provide implications for fundraising practice.

Method

Coding Protocol of Self-Other Similarity

A coding protocol was developed to incorporate four elements in order to categorize self-other similarity in *No*, *Low*, *Moderate*, and *High* levels. These four elements are *awareness of shared identity*, *number of shared identities*, *importance of shared identity*, and *self-other overlap* (See Appendix 1). Below, I will discuss each of these four elements and how they were used to objectively determine different levels of self-other similarity.

Awareness of shared identity. Research has found that people feel similar to others if they are aware that they share certain *characteristics* with others, such as gender, race, religion, ethnicity, and occupations (Lin et al., 1992; Liviatan, Trope, & Liberman, 2008; Mitteness, DeJordy, Ahuja, & Sudek, 2016; Montoya et al., 2008). In psychology, the awareness of self and self-reflection, shaped by qualities, beliefs, personalities,

expressions, and characteristics, is called *identity* (Leary & Tangney, 2003, p. 3). In addition, research also suggests that *similarity* has a stronger impact on people's opinions and behaviors when people are aware of it (Tidwell et al., 2013). Therefore, I used *awareness of shared identity* (yes/no) as the first element to determine the levels of self-other similarity. If there was no awareness of a shared identity, this variable would be coded "No." If there was awareness of a shared identity, self-other similarity would be coded in the other levels (*Low*, *Moderate*, or *High*).

Number of shared identities. In the 1970s, cognitive psychologists developed *featural approaches* to examine similarity, which suggests that people determine similarity through comparing the properties of items with lists of features. The more commonalities there are, the higher the similarity (Gentner & Markman, 1997). Based upon these approaches, I used *number of shared identities* as the second element to determine the levels of self-other similarity. A "*Low*" level of self-other similarity would be coded if there was only *one* shared identity between other donors and the self. If there were one or more shared identities between other donors and the self, a higher level of similarity (e.g. *Moderate* and *High*) would be coded.

Importance of shared identity. In addition, research suggests that the effect of self-other similarity is diminished if the importance of the shared identity is low. For example, research has found that individuals are less motivated to follow the giving of same-gender others when this shared identity (gender) is not perceived as important (Shang et al., 2008). Therefore, I included *importance of shared identity* (high/low) as another key element in determining the level of self-other similarity. The higher the importance of a shared identity, the higher the similarity would be. A "*Low*" level of self-

other similarity would be coded when importance of a *shared* identity was low. A higher level of self-other similarity would be coded when the importance of a shared identity was high.

Self-other overlap. In psychology, self-other overlap is defined as how a person sees another person (or group of people) as being included in their sense of self or identity. A feeling of self-other overlap can be generated when people overlap with others in their resources, perspectives, or characteristics (Aron, Aron, Tudor, & Nelson, 1991). Therefore, self-other overlap is an important way of representing similarity. However, self-other overlap does not only refer to an overlap in characteristics (e.g. gender, race, ethnicity) and perspectives (e.g. attitudes, opinions), but also in resources (e.g. government and tax payer, married couples)¹. As such, I included *self-other overlap* as another important element in determining similarity levels. A “*High*” level of self-other similarity would be coded only if individuals overlap with other donors in one of these dimensions. Self-other overlap can be different from other three elements. Specifically, the other three elements all focus on a shared identity. When people share an identity, self-other overlap automatically exists in certain aspects (e.g. biological or social attributes) in which the shared identity has been shaped. However, self-other overlap can also occur between people who do not share any identity. For example, people in a domestic relationship may not share any identity, but they may overlap in some characteristics (e.g. physical attractiveness), perspectives (e.g. interests, attitudes), and resources (e.g. financial resources, living space). Therefore, it is important to include

¹ See Appendix 1 for various definitions.

self-other overlap as one of the key elements to determine the levels of self-other similarity when people feel similar to others due to self-other overlap in certain aspects rather than a shared identity.

Table 2-1 reports coding protocol to determine the four levels of self-other similarity (No, Low, Moderate, and High) based upon the four elements discussed above.

Table 2-1

[Coding Criteria of Self-Other Similarity]

The coding criteria of self-other similarity based upon the four elements may have potential limitations. Specifically, in terms of *number of shared identities*, this protocol used “one” as a threshold to distinguish a “Low” level of similarity (one shared identity) from higher levels of similarity (one or more shared identities). However, people’s perceptions about similarity would be based upon the importance of a specific shared identity rather than numbers of shared identities. In addition, in this protocol, I limited the levels of *importance of shared identity* (high/low) and *self-other overlap* (yes/no) to be binary, in order to simplify the coding process. However, it is possible that these two elements might have more than two levels (e.g. slight importance, or some self-other overlap). Although this coding protocol might have potential limitations, it provides a simplified model that other researchers could easily apply to code the levels of similarity between two individuals. In order to ensure the reliability of this coding protocol and future replications of this systematic review, I trained a research assistant to apply this protocol to code the 17 empirical studies that I also coded. The comparison of our coding results indicated a high inter-coder reliability (94.1% agreement), suggesting that this

protocol is reliable for researchers to replicate this review, as well as to determine levels of self-other similarity in future studies.

Eligibility Criteria

The main research question in this systematic literature review is how self-other similarity affects individuals' charitable giving in donor-donor dyads. In order to be eligible for this review, studies should report empirical evidence on how individuals' own giving is affected by other donors. In addition, since the focus of this review is to investigate individuals' decision making in charitable giving, it is reasonable to exclude studies using samples of children and adolescents (under 18 years of age) because they are not financially independent. In addition, in order to investigate the potential role of self-other similarity on charitable giving, I limited eligible studies to only those that reported enough information for researchers to code the levels of similarity between individuals and other donors. The eligible studies also had to provide enough information on how people would respond differently in situations with different levels of similarity to others donors (e.g. in *No* versus *Moderate* similarity situation). Additionally, I chose to limit sources to peer-reviewed journal articles and books because these are considered validated knowledge and are likely to have the highest credibility in the field (Rowley & Slack, 2004). Besides, I limited the eligible studies to be those with titles and abstracts in English. Finally, I excluded the crowding out literature from this review since its theoretical framework is altruism, which has been developed to explain the motives to give in donor-recipient dyads rather than our main focus of this review, the similarity effects in donor-donor dyads. Taken together, in order to select eligible studies to answer my research question in this systematic literature review, the following eligibility criteria

(with the exclusion criteria in the parenthesis) were used for titles and abstracts screening and full text assessments:

- Reported *empirical* evidence on a social influence effect in *donor-donor* dyads. (Exclude when studies did not report empirical evidence regarding the effect of others' giving on ones' giving. Excluded examples are studies discussing empirical evidence regarding social influence on giving in *donor-solicitor* or *donor-recipient* dyads, or studies discussing a theoretical model *without* reporting empirical evidence regarding social influence on giving in donor-donor dyads.)
- Dependent variable was charitable monetary giving. (Exclude when studies' dependent variable was other types of prosocial behavior, e.g. volunteering, helping, blood donation, organ donation, prosocial lending, etc.)
- Charitable giving was individual's *own* giving decision. (Exclude when charitable giving is a joint giving decision.)
- Study samples were adults who were at least 18 years of age or older. (Exclude studies using samples of children and adolescents under 18 years old.)
- Provided enough information to code self-other similarity between individuals and other donors. (Exclude when studies did not indicate the effects of similarity between donors on giving.)
- Provided enough information to compare individuals' responses to other donors' giving at different levels of self-other similarity. (Exclude when only one level of self-other similarity could be coded.)
- Peer reviewed journal articles and books. (Exclude non-peer reviewed studies, e.g. magazines, dissertations.)

- Studies in English. (Exclude studies in other languages.)
- Studies that explain motives of giving in donor-donor dyads (Exclude studies in crowding out literature.)

Information Sources Search and Study Selection

From June 2017 to November 2017, I performed a systematic search and selection for eligible studies on four electronic databases through Indiana University's library: PsycINFO (1987-2017), EBSCO (1987-2017), ProQuest (1983-2017), and Web of Science (1985-2017). I developed a list of keywords used in searches based upon two main concepts: *individuals' charitable giving* and the *influence of other donors' giving* (See Table 2-2). One set of keywords, developed based upon the first concept, *individuals' charitable giving*, included the most commonly used synonyms of charitable giving, such as charitable donation(s), philanthropic giving, philanthropic donation(s), etc. Another set of keywords, developed based upon the second concept, *influence of other donors' giving*, was derived from the key theoretical concepts that were commonly drawn to explain the influence of others' giving on one's own giving, including Social Influence (Cialdini & Goldstein, 2004), Social Information (Shang & Croson, 2009), Social Comparison Theory (Festinger, 1954), Conditional Cooperation (Frey & Meier, 2004), Social Identity (Tajfel, 1974), Self-other Overlap (Aron et al., 1991), and Group Identity (Turner & Tajfel, 1986).

Table 2-2

[Keywords and Main Concepts Used in Searches]

I used a combination of two sets of keywords in full text searches on the four electronic databases (See Table 2-2). Being aware that the search results from a keyword

searching strategy may be limited by the list of keywords used, researchers suggest using other searching strategies, such as forward and backward searches to improve the comprehensiveness of search results (Jalali & Wohlin, 2012). Thus, I also conducted forward and backward searches. Specifically, I went backward by reviewing the citations for all potential eligible articles identified during the screening process to check and identify additional studies that might be eligible for the review. Additionally, I went forward by using the Web of Science (the electronic version of the Social Sciences Citation Index) to identify additional articles citing the potential eligible articles.

I first screened the titles and abstracts of all the searched results from the four electronic databases. I excluded articles that did not meet the eligibility criteria discussed above, with exclusion reasons listed in the original documents. If a study's title and abstract did not provide enough information to be excluded, it was identified as a *potential eligible article* for further assessment. After identifying all potential eligible articles on the four databases, I removed the duplicated articles. I used these remaining potential eligible articles to conduct backward and forward searches to identify more potential eligible articles. The full text examination to determine eligibility was conducted on all the potential eligible articles obtained from different searching strategies (e.g. searches of keywords on four electronic databases, and backward and forward searches). Potential eligible studies in any articles that did not meet the eligibility criteria were excluded with reasons. The search and selection results in each step will be reported later in the results section (see Figure 2-2 and Appendix 2).

Data Collection, Data Items and Measures

After identifying all eligible studies, I coded each study on thirteen items across three categories: basic information, self-other similarity, and individuals' charitable giving. The first category, basic information, included three items: *publication information* (e.g. last name of the author(s) and year of publication), *study number* (e.g. single study or study X in an eligible article), and *study condition* (e.g. treatment or control). The second category, self-other similarity, included six items. The first four are the key elements used to code the levels of self-other similarity, including *awareness of shared identity* (yes/no), *number of shared identities*, *importance of shared identity* (low/high), and *self-other overlap* (yes/no). The other two items were *levels of self-other similarity* (No/Low/Moderate/High) in a study condition, which was determined by the coding results on the four key elements, and *comparisons on levels of similarity*, which was similarity comparisons between study conditions within a study (e.g. No versus Low or No versus Moderate). The third category, individuals' charitable giving, included four items on two measures of individuals' charitable giving, giving propensity (e.g. whether gave or not) and giving amount (e.g. how much was given) (See Figure 2-1).

Figure 2-1

[Data Items across Three Categories]

Four elements and the levels of self-other similarity were coded based upon the coding protocol discussed above (See Appendix 1). In this review, all eligible studies contained at least two experimental conditions, which indicated two levels of self-other similarity. In order to synthesize empirical evidence on the effects of self-other similarity on individuals' charitable giving, I grouped the eligible studies by the coding results of

the item *comparisons on levels of similarity* (e.g. *No* versus *Low* Similarity, or *Low* versus *Moderate* Similarity) to report the coding results later.

Potential Risk of Bias in Methods

There are two sources for risk of bias: risk of bias in individual studies, and risk of bias across studies. In this study specifically, I chose to ensure a lower risk of bias in individual studies by limiting eligible studies to peer-reviewed studies only, which are normally perceived as higher in quality. However, this selection process may increase a potential risk of bias across studies due to publication bias (i.e. studies with statistically significant findings are more likely to get published). In addition, most eligible studies in this review were not designed to directly investigate a potential role of self-other similarity on charitable giving, and as a result, I was only able to include and code studies that had provided enough information on similarity between donors. What's more, the keyword searches through the four databases started from different years due to the fact that these were the earliest available resources that I could obtain through the university's library. Thus, researchers should be aware that this search limitation could cause a potential selection bias. Unfortunately, these potential risks of bias cannot be easily addressed in this literature review. Therefore, it is important to be aware that the findings in this systematic literature review on the effects of self-other similarity on charitable giving has some limitations since they are based upon peer-reviewed studies that reported enough information for researchers to code all the data (see Figure 2-1). In order to further understand the role of self-other similarity on charitable giving in donor-donor dyads, more studies should be designed that directly investigate this topic. Regardless, this systematic literature review is still crucial for making the first attempt to reconcile

mixed findings from the prior literature regarding other donors' influence on individuals' own giving via an important psychological construct, *self-other similarity*. This systematic literature review can also help to identify gaps in the literature and suggest implications for future research and practice.

Results

Study Selection

The study selection results is reported in a flow diagram developed based upon the PRISMA Statement (Moher et al., 2009) (See Figure 2-2). Keyword searches on the four databases yielded a total of 1,153 records for screening (26 from PsychINFO, 370 from EBSCO, 722 from ProQuest, and 35 from Web of Science). During the screening process, I excluded 1,111 records based upon information in titles and abstracts (see eligibility criteria). The remaining 42 records were identified as potential eligible articles needed for further assessment (8 from PsychINFO, 10 from EBSCO, 11 from ProQuest, and 13 from Web of Science). After removing the duplicates, there were 28 potential eligible articles identified. I first conducted backward and forward searches to identify additional potential eligible articles using the same selection process. There were an additional 12 potential eligible articles identified through forward and backward searches and screening. Then, a full text examination of 40 potential eligible articles (28 from keyword searches and 12 from backward and forward searches) was conducted, of which subsequently 27 articles were excluded (see excluding reasons in Appendix 2). At the end of this process, there were 13 published articles identified that contained eligible studies for this review. Due to the fact that some of these articles included more than one eligible study, there were a total of 17 studies identified as eligible for coding.

Figure 2-2

[A Flow Diagram of Study Selection Process]

Coding Results of Eligible Studies

As discussed in the method section, I coded the eligible studies on thirteen data items across three categories (see Figure 2-1). I grouped the studies by the coding results of the item *comparisons on levels of self-other similarity* into three groups: *No* versus *Low*, *No* versus *Moderate*, and *Low* versus *Moderate*. In order to present the coding results of thirteen items clearly, I split the coding results into two separate tables. In Table 2-3, I reported coding results of nine of the thirteen items: three items in *basic information* category (publication information, study number, study condition) and the other six in *self-other similarity* category (awareness of shared identity, number of shared identities, importance of shared identity, self-other overlap, levels of self-other similarity, and comparisons on levels of similarity). In Table 2-4, I reported the coding results of six of the thirteen items: two items in the *basic information* category (publication information, study number) and the other four in *individuals' charitable giving* category (two items on giving propensity and two items on giving amount).

Table 2-3

[Coding Results on Levels of Self-Other Similarity]

Table 2-4

[Coding Results on Charitable Giving]

The coding results from this systematic review indicated that self-other similarity could be shaped by shared identities in different forms: *biological or social identity*, and *experimentally induced identity*. A *biological or social identity* refers to an identity that is

shaped by biological or social characteristics. In this review, an example of biological identity included gender (Croson & Shang, 2005; Shang & Croson, 2009) and examples of social identity included students (Reingen, 1982), ice skiers (Heldt, 2005), art museum visitors (Martin & Randal, 2008), national park tourists (Alpizar, Carlsson, & Johansson-Stenman, 2008), residents (Reingen, 1982), and national public radio members (Shang & Croson, 2009; Shang et al., 2008). Examples of *experimentally induced identities* included an experimental group membership identity (Fischbacher et al., 2001).

Most studies in this review found a positive effect of self-other similarity in a shared *biological or social identity* between other donors and individuals. For instance, one study suggested that more skiers chose to donate to support ski track maintenance if they knew that 70% of previous skiers had donated (Heldt, 2005). Another study found that national park visitors donated more if they knew that previous visitors had donated a larger amount (Alpizar et al., 2008). Another study suggested that when museum visitors assumed that the donations in a transparent box at the museum entrance were from the previous visitors, they were more likely to donate (giving propensity) and donated at a larger amount (giving amount) (Martin & Randal, 2008). Furthermore, an additional study found that residents were more likely to donate and give a larger amount when they saw a donor list of other residents' names (Reingen, 1982). Finally, members of National Public Radio (NPR) were more likely to donate at a larger amount than other members when they were informed that another donor was of the same gender (Croson et al., 2010).

The coding results also suggested a positive effect of similarity in a shared *experimentally induced identity* between other donors and individuals. For instance, one

study found that when group membership identity was manipulated through random assignment, participants' giving was more likely to be positively influenced by other group members' giving (Fischbacher et al., 2001).

As discussed before, an individual may perceive others as similar to the self not only when others shared a biological, social, or induced identity, but also when others overlap with the self in characteristics, perspectives, or resources. However, little is known about how self-other similarity that is shaped by self-other overlap in *perspectives* (e.g. attitudes and opinions) or *characteristics* (e.g. facial appearances, clothing styles, birthdates, surnames) could affect charitable giving in donor-donor dyads, since this review did not find any eligible study that manipulates similarity in these aspects.

Results Synthesis

In Table 2-5, I reported a summary of the coding results grouped into *No* versus *Low*, *No* versus *Moderate Similarity*, and *Low* versus *Moderate Similarity* on both measures of charitable giving (i.e. giving propensity and giving amount). If a measure of an individual's giving was not applicable or was not reported in the study, the giving measure was coded as *not applicable (N/A)* or *not reported*. For example, if people were asked to make a donation at a fixed amount, the only applicable measure of giving in this situation would be giving propensity, thus the measure of giving amount would be coded as *not applicable* (see an example in Heldt, 2005). A study was coded as a *positive correlation* between similarity and a measure of charitable giving (giving propensity or giving amount) if the study provided enough information indicating that individuals donated more in a higher level of self-other similarity situation compared to those in a lower level of similarity situation. For example, if a study reported individuals' charitable

giving amount was lower in the control condition in which other donors did not exist (*No Similarity*) than in the social influence condition with another donor in the same gender and membership identities (*Moderate Similarity*) without mentioning any information on giving propensity, giving *amount* would be coded as *positive* and giving *propensity* would be coded as *not reported* (Croson & Shang, 2005). Any studies that reported statistically non-significant results on the measures of charitable giving were coded as a *null* correlation between self-other similarity and measures of charitable giving.

Table 2-5

[Data Synthesis]

According to the summary of the results in Table 2-5, most studies indicated a *positive* correlation between similarity and charitable giving. When similarity moved from *No to Low Similarity* levels, 100% of the studies found a positive correlation on giving *propensity*, and 30% found a positive correlation on giving *amount*. When going from *No to Moderate Similarity* levels, 50% of studies found a positive correlation on giving *propensity*, and 75% found a positive correlation on giving *amount*. And when going from *Low to Moderate Similarity* levels, 100% of studies found a positive correlation reported on giving *amount*, and not studies on giving propensity were found. However, this systematic literature review did not find any eligible articles that manipulated similarity in high levels, which suggests a literature gap on the effects of similarity.

These results suggest an inconclusive relationship between self-other similarity and individuals' charitable giving in donor-donor dyads. That is, individuals are more likely to be *positively* influenced by other donors when others are perceived as *slightly*

similar or *moderately similar* to the self. However, considering the fact that there was no study identified as eligible at a high level of similarity, it is difficult to conclude the relationship between the similarity effects and charitable giving. In order to better understand the relationship, more studies are needed to fill the literature gap by manipulating high similarity and investigating the effects of self-other similarity on individuals' giving in donor-donor dyads at different levels (i.e. No, Low, Moderate and High).

It is also important to note that only 7 out of 17 studies (approximately 41.2%) reported individuals' charitable giving on both measures (i.e. giving propensity and giving amount). However, studies in this review that reported both measures indicated that the effects of self-other similarity on the two giving measures might be different. For example, approximately 17.6% studies reported a positive correlation on one giving measure (propensity or amount) but reported a null correlation on the other measure (Alpizar et al., 2008; Reingen, 1982). Thus, future research should report both outcomes.

Risk of Bias of Coding Results and Synthesis

In the method section, I discussed potential risks of bias due to article selection, data coding, and study reporting. Here are a few specific risks that I identified by coding the eligible studies in this systematic review. The first bias was caused by a low representation of high self-other similarity. As shown in Table 2-3, there was only one eligible study which investigated a high level of self-other similarity. Thus, it is necessary to be skeptical about a negative correlation between perceived high similarity and individuals' charitable giving.

The second risk of bias was due to a concentrated group of select scholars investigating this topic. Among the seventeen eligible studies, eight (approximately 47%) had Croson and Shang as coauthors, indicating that the potential role of similarity on charitable giving is yet to be rigorously explored by many other scholars.

The third risk of bias was due to mixed results reported in the studies. For example, one study in this review found a positive influence of others' donations on men's giving amount, but a negative influence on women's giving amount (Greig & Bohnet, 2009). Another study reported a null correlation between moderately similar others' giving and individuals' giving in the full sample that included both donors and non-donors, but reported a positive correlation in the donor-only sample (Alpizar et al., 2008). In this case, I reported in both results in the synthesis results in the Table 2-5. Finally, one study reported a positive correlation between similarity shaped by gender identity and charitable giving when people's identity-esteem was high, but a negative correlation when people's identity-esteem was low (Shang et al., 2008). Therefore, more research is need to reduce the risk of these biases.

Discussion

This review made the first attempt to systematically select empirical studies that reported other donors' influence on individuals' own charitable giving, then coded each eligible study on different data items such as measures of self-other similarity and individuals' charitable giving. The results indicated that little attention has been paid to the potential role of similarity on charitable giving in donor-donor dyads, thus limiting the understanding on this topic.

Even though the synthesis of this systematic review may have potential risks of bias, it helps to identify gaps in the literature, and points out directions for future research. The coding results indicated mixed findings on the influence of others' giving on individuals' giving. As discussed in the introduction, a positive influence on individuals' giving occurs when other donors are perceived moderately similar due to shared biological or social identity (Croson & Shang, 2005; Shang & Croson, 2009). And a negative influence (i.e. crowding out) of others' giving on individuals' giving may occur in two scenarios. First, it may occur when individuals are motivated by pure altruism (e.g. feeling it is not necessary to donate if the recipients' needs have been met by other donors) (Andreoni, 1993). Second, it may occur when individuals feel a substitution effect of other donations as their own (e.g. a feeling of self-other overlap in resources used to donate) (Eckel et al., 2005). In order to better understanding the mechanisms of individuals' charitable giving in donor-donor dyads, this systematic literature review attempted to find an overarching theoretical explanation to reconcile these mixed findings in the prior literature via an important psychological construct, *self-other similarity*.

According to coding results in this review, self-other similarity can be shaped by shared identities in various forms, such as biological, social, and experimentally induced identities, or by self-other overlap in resources. Yet, little is known about whether the effect of one type of similarity would be stronger than a different type. Research has found that individuals' prosocial behavior can be affected by similarity of different types, including identities, perspectives, or characteristics, such as religious affiliation (Yinon & Sharon, 1985), birthdate (Goldberg, 2003), fingerprint types (Dror, Peron, Hind, &

Charlton, 2005), race/ethnicity (Gaertner & Dovidio, 1977), name initials (Bekkers, 2010), college year (Huneke & Pinel, 2016), and values (Sole, Marton, & Hornstein, 1975). Therefore, it is important to investigate whether the effects of self-other similarity on charitable giving differ when similarity is shaped by different types of shared identities (e.g. race/ethnicity, religious and political affiliation etc.), perspectives (e.g. attitudes, values, etc.) or characteristics (e.g. physical attributes, clothing styles, surname, college year, birthdate etc.) in donor-donor dyads.

In addition, given the fact that the effects of self-other similarity on charitable giving may differ between measures of charitable giving, it is important for future research to distinguish between giving propensity and giving amount. And researchers should always report both outcomes in their papers.

Although this systematic literature review may have certain limitations, it suggests some important implications to practitioners in the field. Specifically, until more information is available from future research, this review suggests that nonprofit organizations could apply different approaches to their fundraising strategy. On the one hand, in order to motivate more giving, nonprofit organizations could match donors with their biological or social identity or induce some shared characteristics between donors to activate a temporary shared identity. On the other hand, in order to avoid a crowding out effect on donations between individuals, nonprofit organizations need to be aware of individuals' potential feeling of substitution when similarity is too high. This may especially occur when fundraisers attempt to solicit money from multiple individuals living in the same household.

In order to further understand the effects of similarity on individuals' charitable giving, an experimental study in Chapter 3 was designed to directly investigate the potential effects of *self-other similarity* at different levels (i.e. Low, Moderate, and High), which was shaped by different degrees of overlap in facial appearances, in donor-donor dyads.

Table 2-1: Coding Criteria of Self-Other Similarity

	Awareness of Shared Identity	Number of Shared Identities	Importance of Shared Identity	Self-other Overlap
<i>No Similarity</i>	No	No OR Maybe	N/A	No
<i>Low Similarity</i>	Yes for shared identity OR Yes for Mismatched identity	1	Low for shared identity OR High for Mismatched identity	No
<i>Moderate Similarity</i>	Yes	1 or more	High	No
<i>High Similarity</i>	Yes	More than 1	High	Yes

Table 2-2: Keywords and Main Concepts Used in Searches

Keywords and Main Concepts Used in Searches of the PsycINFO (1987-2017), EBSCO (1987-2017), ProQuest (1983-2017), and Web of Science (1985-2017) Electronic Databases	
Keywords	Key Concepts
Charitable giving, charitable give, charitable donation(s), charitable donating, philanthropic giving, philanthropic give, philanthropic donation(s), philanthropic donating	Individuals' Charitable Giving
Social influence, social information, social comparison, conditional cooperation, social identity, self-other overlap, group identity	Influences of Others' Charitable Giving

Table 2-3: Coding Results on Levels of Self-Other Similarity

Literature	Study Number	Study Conditions	Shared Identities	Awareness of Shared Identity	Importance of Shared Identity	Self-other Overlap	Similarity Level (No/Low/Moderate/High)	Similarity Comparisons
Reingen (1982)	Study 1	Treatment	1	Y	Low	N	Low	No vs Low
		Control	0	N	N/A	N	No	
Reingen (1982)	Study 4	Treatment	1	Y	Low	N	Low	No vs Low
		Control	0	N	N/A	N	No	
Alpizar, Carlsson & Johansson-Stenman(2008)	Single	Treatment	2	Y	High	N	Moderate	No vs Moderate
		Anonymous/gift	0	N	N/A	N	No	
Croson & Shang(2008)	Single study	Treatment	1	Y	High	N	Moderate	No vs Moderate
		No information	0	N	N/A	N	No	
Croson & Shang (2013)	Single	Control	0	N	N/A	N	No	No vs Moderate
		Treatment	1	Y	High	N	Moderate	
Heldt (2005)	Single	Treatment	1 or 2	Y	High	N	Moderate	No vs Moderate
		Control	0	N	N/A	N	No	
Martin & Randal (2008)	Single	Control	0	N	N/A	N	No	No vs Moderate
		Treatment	1	Y	High	N	Moderate	

Literature	Study Number	Study Conditions	Shared Identities	Awareness of Shared Identity	Importance of Shared Identity	Self-other Overlap	Similarity Level (No/Low/Moderate/High)	Similarity Comparisons
Reingen (1982)	Study 2	Treatment	1	Y	High	N	Moderate	No vs Moderate
		Control	0	N	N/A	N	No	
Reyniers & Bhalla (2013)	Single study	Pair group	1	Y	High	N	Moderate	No vs Moderate
		Control	0		N/A	N	No	
Shang & Croson (2009)	Single	Treatment	1	Y	High	N	Moderate	No vs Moderate
		Control	0	N	N/A	N	No	
Fischbacher, Gächter & Fehr (2001)	Single	Conditional	1	Y	High	N	Moderate	Low vs Moderate
		Unconditional	1	Y	Low	N	Low	
Greig & Bohnet (2009)	Single	Mixed sex	1	Y	Low	N	Low	Low vs Moderate
		Same sex	2	Y	High	N	Moderate	
Shang, Reed & Croson (2007)	Study 2	Gender matched	2	Y	High-Membership AND High-Matched gender	N	Moderate	Low vs Moderate
		Gender mismatched	1	Y	High-Membership AND High-Mismatched gender	N	Low	

Literature	Study Number	Study Conditions	Shared Identities	Awareness of Shared Identity	Importance of Shared Identity	Self-other Overlap	Similarity Level (No/Low/Moderate/High)	Similarity Comparisons
Shang, Reed & Croson (2007)	Study 3	Gender matched, high esteem	2	Y	High-Membership AND High-Matched gender	N	Moderate	Low vs Moderate
		Gender matched low esteem	2	Y	Low-Membership AND Low-Matched gender	N	Low	
		Gender mismatched, high esteem	1	Y	High-Membership AND High-Mismatched gender	N	Low to Moderate	
		Gender mismatched, low esteem	1	Y	Low-Membership AND Low-Mismatched gender	N	Low	
Shang, Reed & Croson (2008)	Study 1	Gender matched	2	Y	High-Membership AND High-Matched gender	N	Moderate	Low vs Moderate
		Gender mismatched	1	Y	High-Membership AND High-Mismatched gender	N	Low	

Literature	Study Number	Study Conditions	Shared Identities	Awareness of Shared Identity	Importance of Shared Identity	Self-other Overlap	Similarity Level (No/Low/Moderate/High)	Similarity Comparisons
Shang, Reed & Croson (2008)	Study 2a and 2b	Gender matched, high esteem	2	Y	High-Membership AND High-Matched gender	N	Moderate	Low vs Moderate
		Gender matched low esteem	2	Y	Low-Membership AND Low-Matched gender	N	Low	
		Gender mismatched, high esteem	1	Y	High-Membership AND High-Mismatched gender	N	Low to Moderate	
		Gender mismatched, low esteem	1	Y	Low-Membership AND Low-Mismatched gender	N	Low	
Shang, Reed & Croson (2008)	Study 3a and 3b	Gender matched, high esteem	2	Y	High-Membership AND High-Matched gender	N	Moderate	Low vs Moderate
		Gender matched low esteem	2	Y	Low-Membership AND Low-Matched gender	N	Low	

Literature	Study Number	Study Conditions	Shared Identities	Awareness of Shared Identity	Importance of Shared Identity	Self-other Overlap	Similarity Level (No/Low/Moderate/High)	Similarity Comparisons
		Gender mismatched, high esteem	1	Y	High-Membership AND High-Mismatched gender	N	Low to Moderate	
		Gender mismatched, low esteem	1	Y	Low-Membership AND Low-Mismatched gender	N	Low	

Table 2-4: Coding Results on Charitable Giving

Literature	Study Number	Giving Propensity: Whether Participants Help or Give (Yes/No)	Giving Propensity: Results / Details	Giving Amount: Whether Reported(Yes/No)	Giving Amount: Results/Details
Reingen (1982)	Study 1	Yes	Positive correlation: In the list-then-donation request condition, 26 (43%) of 60 donated, where 15(25%) of the 60 participants in the request-only control condition donated.	Yes	Null: The average donation in the list-then-donation request condition is \$.25 and the average donation in the request-only control condition is \$.48.
Reingen (1982)	Study 4	Yes	Positive correlation: only when many others donated or other donated generously. (1) Positive correlation: Participants who were exposed to a long list are more likely to contribute than participants who were exposed to a short list, and to no list. (2) Null: Participants who were exposed to the short list were not different from those in the control condition in terms of the likelihood of donation. (3) Null: participants in low-donation conditions were not different from the participants in the high donation conditions.	Yes	Positive correlation: According to the general linear model test results, only the size of donation positively predicts the average amount of donations. The length of the list, and normative influence (whether there is a list or not) were not the factors to predict the average donation amount. In terms of the total donation, the long/high condition generated the highest amount of total donation than the short/low condition.

Literature	Study Number	Giving Propensity: Whether Participants Help or Give (Yes/No)	Giving Propensity: Results / Details	Giving Amount: Whether Reported(Yes/No)	Giving Amount: Results/Details
Alpizar, Carlsson & Johansson-Stenman(2008)	Single	Yes	Null: Non-anonymous conditions increased the possibility of donating, ns ($p=.433$). And a lower reference point (\$2) had a higher propensity of donating, compared to higher levels of reference points (\$5 and \$10).	Yes	Null for all sample. Positive for donors only. The non-parametric test results indicated that participants donated 25% higher amount on average in non-anonymous condition compared with the anonymous treatment, ns ($p=.0166$). The result also indicated that among donors, participants in non-anonymous condition donated 19% higher amount than other donors in anonymous condition ($p=.09$). And the conditional donation amount (non-zero) increased as the reference levels increased from \$2 to \$10.
Croson & Shang(2008)	Single study	No	Not reported	Yes	Positive correlation: The upward information and downward information had asymmetric effects on individual's donation. Specifically, the negative effect of downward information is twice as large as the positive effect of the upward information. No difference of the effects of social information was found between the phone and mail solicitation.

Literature	Study Number	Giving Propensity: Whether Participants Help or Give (Yes/No)	Giving Propensity: Results / Details	Giving Amount: Whether Reported(Yes/No)	Giving Amount: Results/Details
Croson & Shang (2013)	Single	No	Not reported	Yes	Positive correlation: only when other donors give a reasonable high amount. The \$600 (95th percentile) social information treatment caused a significant increase of the contribution compared to the control condition. Yet, \$1000 (99th percentile) social information treatment caused a significant decrease of the contribution compared to the 95th percentile treatment. And even though donations in \$600 condition is statistical higher than donations in the control condition ($p=.014$), there is no statistical significant differences between donations in control and in \$1000 condition ($p=.02$).
Heldt (2005)	Single	Yes	Positive correlation: In total sample and tourist sample, more people in the treatment group who know that 70% previous skiers donated, more likely to make the contribution compared to people in the control group. 44% people in the treatment group donated while 22% people in the control group donated.	No	N/A because participants were asked to donated a fixed amount.

Literature	Study Number	Giving Propensity: Whether Participants Help or Give (Yes/No)	Giving Propensity: Results / Details	Giving Amount: Whether Reported(Yes/No)	Giving Amount: Results/Details
Martin & Randal (2008)	Single	Yes	Positive correlation: The 50 cents treatment caused the highest propensity to donate and the empty treatment caused the lowest propensity to donate. The propensity of donation was not significantly different in treatments of \$5 and \$50 from that in the empty condition. The giving propensities to donate equal to 2.3%, 2.6%, 3.4% and 1.9% in the \$50, \$5, 50cents and empty regimes respectively.	Yes	Positive correlation: In general, non-empty treatment generated higher average donations per visitor ($p=.0007$). The post pairwise tests between empty regime and each of other three regimes are statistically significant ($p=.024$, $p=.0008$, and $p=.014$ respectively).
Reingen (1982)	Study 2	Yes	Positive correlation: In the list-then-donation request condition, 22 (73%) of 30 donated, where 14 (47%) of the 30 participants in the request-only control condition donated.	Yes	Null: The average donation in the list-then-donation request condition is \$1.48 and the average donation in the request-only control condition is \$1.36.
Reyniers & Bhalla (2013)	Single study	Yes	Positive correlation: The likelihood of zero donation (giving nothing) was statistically less in pair groups than in control groups ($\beta = -.135$, $p < .05$).	Yes	Positive correlation: The amount of giving increased when participants were affected by the other person's giving in the group than they gave alone.

Literature	Study Number	Giving Propensity: Whether Participants Help or Give (Yes/No)	Giving Propensity: Results / Details	Giving Amount: Whether Reported(Yes/No)	Giving Amount: Results/Details
Shang & Croson (2009)	Single	No	Not reported	Yes	Positive correlation: only when other donors give high amount. The \$300 (90th percentile) social information caused a significant increase of contribution compared to the control condition. The contribution in the \$75 (50th percentile) social information did not statistically significant from that in the control condition. The \$180 (85th percentile) treatment indicated marginal significant in the robust regressions. Based upon this finding, it seems the similarity differences between donors may not play a significant role unless another donor's contribution is high.
Fischbacher, Gächter & Fehr (2001)	Single	No	Not reported	Yes	Positive correlation if other's giving is below average: 50% of participants were willing to make a contribution depending on other members' average contribution. Negative correlation if others' giving is above average ($p < .001$). Yet, when other members contributed more on average, the individual's own conditional contribution is decreasing.

Literature	Study Number	Giving Propensity: Whether Participants Help or Give (Yes/No)	Giving Propensity: Results / Details	Giving Amount: Whether Reported(Yes/No)	Giving Amount: Results/Details
Greig & Bohnet (2009)	Single	No	Not reported	Yes	Positive for women and negative for men: Total earning per each member from both the Public Goods and Investment game was Ksh 123 (\$1.57). Average contribution was Ksh 14.59 (\$0.19) or 29 percent of the endowment; women and men contribute nearly equal amounts within same-sex groups, which are 31 percent and 32 percent respectively. There is a difference in contribution between women (21%) and men (34%) in mixed-sex groups. Women were more optimistic about others' contributions in same-sex than in mixed-sex groups.
Shang, Reed & Croson (2007)	Study 2	No	Not reported	Yes	Positive correlation: The matched gender condition generated higher donation amount than the mismatched gender condition ($p < .05$).
Shang, Reed & Croson (2007)	Study 3	No	Not reported	Yes	Positive correlation: The self-reported contributions to the public radio depends on the identity salience, the self-importance of the identity and the collective mindsets of the participants ($p < .05$).
Shang, Reed & Croson (2008)	Study 1	No	Not reported	Yes	Positive correlation: No gender difference was found in the effect of identity congruency on contributions. Participants gave more in identity congruent condition than in identity incongruent condition ($p < .05$).
Shang, Reed & Croson (2008)	Study 2a and 2b	No	Not reported	Yes	Positive correlation: The effect of the identity congruency on individual's contributions depends on the self or other focus ($p < .05$).

Literature	Study Number	Giving Propensity: Whether Participants Help or Give (Yes/No)	Giving Propensity: Results / Details	Giving Amount: Whether Reported(Yes/No)	Giving Amount: Results/Details
Shang, Reed & Croson (2008)	Study 3a and 3b	No	Not reported	Yes	Positive correlation: The effect of the identity congruency on individual's contributions depends on the self or other focus. Social information from the same gender had a largest effect when individuals are other focused and have high identity esteem ($p < .05$).

Table 2-5: Data Synthesis

Comparison	# of Eligible Studies	Giving Propensity	Giving Amount ²
No VS Low	2	2/2 Positive	1/2 Positive 1/2 Null
No VS Moderate	8	4/8 Positive 1/8 Null 3/8 Not reported	6/8 Positive 2/8 Null 1/8 N/A
Low VS Moderate	7	7/7 Not reported	7/7 Positive 2/7 Negative

² The summation of studies in each category (positive, negative, null or not reported) may exceed the total number of eligible studies because three studies (one in No versus Moderate and two in Low versus Moderate) reported mixed findings of the influence on giving amount. Specifically, Alpizar et al. (2008) found no influence of other's giving on the full sample (donors and non-donors), but a positive influence of other's giving on the donor only sample. Greig & Bohnet (2009) found a positive influence on men but negative influence on women. In addition, Shang et al. (2008) found a positive correlation when identity esteem was high but a negative correlation when identity esteem was low.

Figure 2-1: Data Items across Three Categories

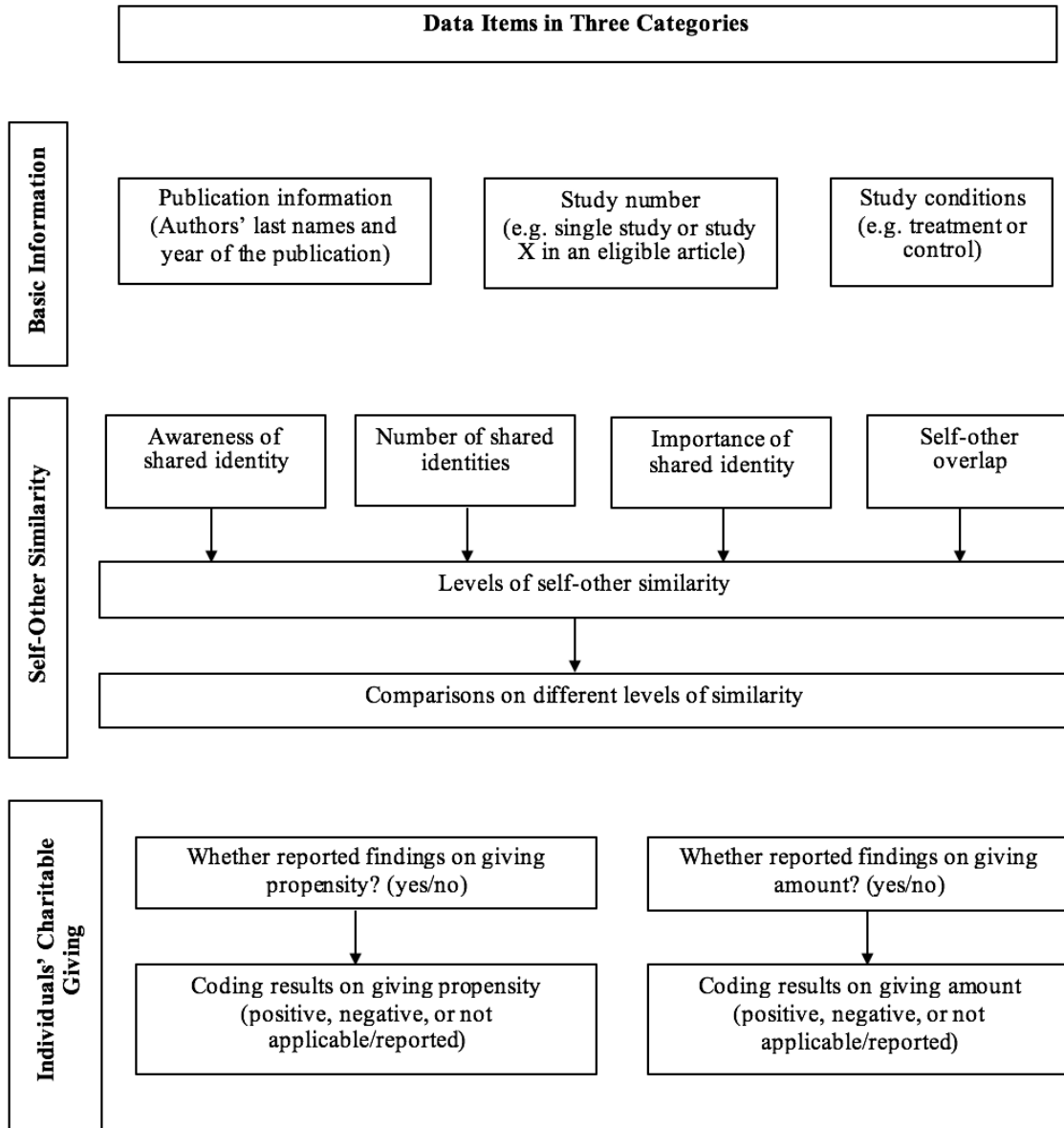
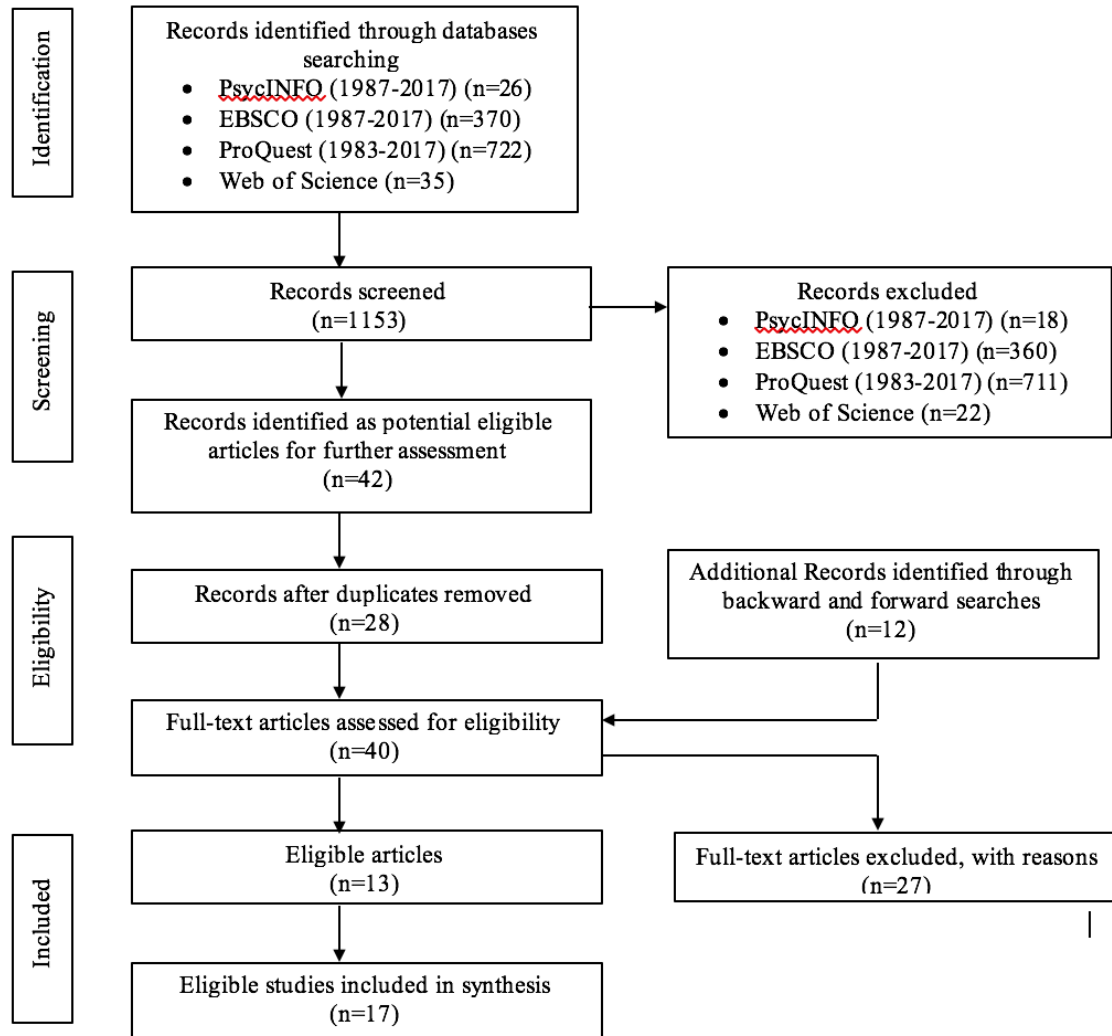


Figure 2-2: A Flow Diagram of Study Selection Process



Note: The flow diagram is developed based upon Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

Chapter 3 THE EFFECTS OF DIFFERENT LEVELS OF SIMILARITY ON CHARITABLE DONATIONS: A LAB EXPERIMENT

Individual Americans donated 72% of the total giving amount, \$390 billion, in the United States in 2016 (USA, 2017). Given this, it is critical to understand factors that influence people's decision making in charitable giving. Why do people donate their money to others? Research has identified many factors that affect charitable giving, including altruism, trust, tax breaks, egoism, budget constraint (Konrath & Handy, 2017). This chapter focuses on the role of *social influence*, which is when people's decision-making and behaviors are influenced by others (Cialdini & Goldstein, 2004; Kelman, 1958). Specifically, Chapter 3 examines whether charitable donations are driven by social influence based upon one's similarity to other donors.

How Similarity Influences Behavior

Similarity is an important psychological construct, and affects all kinds of individual behaviors, such as aggression (Baron, 1971), counter-aggression (aggressive reaction to others' aggression) (Hendrick & Taylor, 1971), interpersonal attraction (Donn Byrne, 1961; Secord & Backman, 1964), consumer purchasing behavior (Woodside & Davenport, 1974), alcohol consumption (Andsager, Bemker, Choi, & Torwel, 2006), and compliance (Burger, Messian, Patel, del Prado, & Anderson, 2004; Silvia, 2005). Similarity also affects a variety of prosocial behaviors, such as helping (Sole et al., 1975), comforting and rescuing (Eagly & Koenig, 2006), cooperation (Sinervo & Clobert, 2003), and positive social interactions (Boivin, Dodge, & Coie, 1995; Lee, Piliavin, & Call, 1999).

Similarity in Charitable Giving

Similarity also plays an important role in charitable giving specifically. However, with charitable giving, there are a variety of different ways that similarity can affect people's donation behavior because of the different roles involved.

Donor similarity to solicitors. Research suggests that individuals are more likely to give (or give more) when they are asked by similar others (or asked in the presence of similar others), for example, by those who share the same religious background or first name (Bekkers, 2010; Yinon & Sharon, 1985).

Donor similarity to recipients. In addition, individuals are more likely to give (or give more) to similar recipients, for example, to those who share the same religious beliefs (Helms & Thornton, 2012; Yinon & Sharon, 1985) or to other in-group recipients who share the same characteristics, such as political views, sports-team preferences, music preferences, compared to out-group recipients (Ben-Ner, McCall, Stephane, & Wang, 2009).

Donor similarity to other donors. Similarity also plays an important role in donor-donor dyads in different ways. In the current paper, we are interested in examining how individuals' responses differ when they perceive themselves to be low in similarity, moderate in similarity, or high in similarity to other donors. As reported in more details in Chapter 2 of this dissertation on charitable giving and social influence, there are contradictory findings in terms of how people respond to other donors' charitable giving.

In Chapter 2, a coding protocol has been developed to determine different self-other similarity levels between donors: *No Information*, *Low Similarity*, *Moderate Similarity*, and *High Similarity*, based upon four different elements (See Table 3-1). In

Chapter 2, seventeen studies have been identified as eligible and have been coded using this protocol.

Table 3-1

[Coding Criteria of Similarity]

The coding results in Chapter 2 indicate inconclusive effects of different levels of donor-donor similarity on charitable giving:

Positive effect of similarity. More similarity to other donors can have a positive influence on individuals' charitable giving. In other words, it's possible that individuals could be more likely to give (or give more) in the presence of others who are *moderately similar* to them. For example, a field experiment on a sample of tourist skiers found that, 44% of participants donated a fixed amount when they were told that 70% of previous skiers donated (*Moderate Similarity*), while only 22% of participants donated that fixed amount when participants did not have any information about the previous donors' charitable giving (*No Information*) (Heldt, 2005). Another field experiment on a sample of National Public Radio (NPR) members found that participants donated more after being told that another NPR member of the same gender donated (*Moderate Similarity*), than when they were told that another NPR member of a different gender donated (*Low Similarity*) (Shang et al., 2007). Thus, at times, people will be more likely to donate in the presence of a similar other.

Negative effect of similarity. Yet donors' similarity to other donors can also have a negative influence on individuals' charitable giving. In other words, individuals may give less (or be less likely to give) after similar others have given. For example, in a lab experiment, men were found to donate less if other group members of the same gender

donated (Moderate Similarity) than if other group members of the mixed gender donated (Low Similarity) (Greig & Bohnet, 2009).

However, the systematic literature review in Chapter 2 did not find any eligible study that manipulated high levels of similarity, which is important to do if there are potential backfire effects due to high similarity.

Extend Previous Work on Donor-Donor Similarity

The current paper aims to extend the previous work on the effect of different levels of similarity to other donors in charitable giving in three areas. First, as reported in the above section on donor similarity to other donors, research has found mixed results in terms of how individuals respond to others' charitable giving, yet no one has investigated any factors that help to connect these competing findings. Based upon the systematic literature review in Chapter 2, it seems that no study has investigated similarity effects at high levels on charitable giving. Since empirical evidence has identified a curvilinear relationship between intergroup similarity and positive differentiation (See Jetten et al, 1998), it is important to further examine the curvilinear effects of similarity on charitable giving. However, the effects of similarity on charitable giving remains inconclusive without empirical evidence in the high level of similarity. In order to fill the literature gap and contribute to a better understanding of this issue, the current study is designed to use an innovative approach, facial morphing, to manipulate different levels of the perceived donor-donor similarity, including a high level.

Second, 65% of studies reviewed in Chapter 2 examined only one measure of charitable giving, either on *decision to donate* (yes or no) or *donation amount*. Yet, studies that examined both measures suggested that the influence of other donors on

individuals' charitable giving might be different. For example, some studies found that other donors' giving had a positive influence on one measure of charitable giving, yet had no effect on another measure of charitable giving (Alpizar et al., 2008; Reingen, 1982). Thus, the current study is designed to examine the effects of self-other similarity between donors on both measures of charitable giving, the *decision to donate* and the *donation amount*.

Rationale for the Current Study

How do different levels of similarity to other donors affect individuals' charitable giving? Before answering this question, it is helpful to understand what motivate individuals' giving that would lead similarity to play an important role in charitable giving. Konrath and Handy (2017) reviewed different motives to give, including altruism (i.e. to improve the recipients' well-being), trust in charitable organizations (i.e. to increase the impact of donations), social (i.e. to make others happy or to avoid group ensure), egoism (i.e. to enhance donors' reputation), fiscal incentives (i.e. taxes constraints), guilt (i.e. to avoid negative feelings) and warm-glow (i.e. to increase the self-satisfaction through donating). They classified these different motives to give into two categories: *self-oriented motives* and *other-oriented motives*. Since similarity is closely related to self-identification. We argue that the leading motive to give is a *self-oriented* motive rather than an *other-oriented* motive. Specifically, in donor-donor dyads, it is reasonable to assume that the leading motive to give could be *identity*; that is donors' identification in self through comparing with other donors, which leads similarity to play a role in charitable giving. However, since our main focus of this study was to detect the similarity effects at different levels on charitable giving, and successful randomization

process would balance giving motives across experimental conditions, we did not report the giving motives in this study.

Then, building on *Similarity Attraction Theory* (Donn Byrne, 1961) and *Optimal Distinctiveness Theory* (Brewer, 1991), *Self-Other Oversimilarity Hypothesis* is developed in the charitable giving context.

Similarity Attraction Theory posits that interpersonal attraction increases as similarity increases. In Byrne's original (1961) paper, he manipulated similarity through attitude sharing and found that participants liked a stranger better if the stranger had similar attitudes compared to dissimilar attitudes. This positive relationship between similarity and attraction has been tested and confirmed in a variety of contexts, including small groups (Lott & Lott, 1965), applicant-employee fit (Van Hoya & Turban, 2015), friendship (Mitteness et al., 2016), and supervisor-subordinate relationships (Bakar & McCann, 2014). However, research has found a mixed finding of similarity effect; that is, similarity is non-linearly related to interpersonal attraction and positive intergroup differentiation (Jetten et al., 1998; Penton-Voak, Perrett, & Peirce, 1999).

Optimal Distinctiveness Theory posits that individuals have two fundamental yet competing needs: the need for *assimilation* and the need for *differentiation*. Brewer (1991) argues that individuals constantly adjust the levels of both needs based upon feelings of belongingness to a group. When these feelings are high, their needs for assimilation decrease, and their needs for differentiation increase. But when these feelings are low, their needs for assimilation increase, and their needs for differentiation decrease. Simply speaking, individuals try to reach the most optimal, or comfortable, condition by balancing these two competing needs.

Self-Other Oversimilarity Hypothesis. Applying *Similarity Attraction Theory* to charitable giving, this paper posits that individuals are more likely to give (or give more) when moderately similar others give, compared to when less similar others give (or no information is given). This is because moderately similar others are seen as more attractive to them. Yet, what if the self-other similarity becomes too high? Jetten et al. found initial evidence of the curvilinear effects of similarity in intergroup relationship and it is very likely that the effects of similarity in charitable giving could be non-linear as well. Based on *Optimal Distinctiveness Theory*, the needs for assimilation and the needs for differentiation are continually in tension. In the charitable giving context, people might be less likely to donate when a highly similar other donates in order to differentiate themselves from that person. Therefore, individuals will feel less needed to donate or perceive potentially low impact in the presence of other donors in high similarity to the self, because those are substitutions for the self.

Thus, overall, this paper hypothesizes the curvilinear effects of self-other similarity between donors on individuals' charitable giving (See Figure 3-1). This paper expects to find a higher likelihood of giving and a larger amount of giving from individuals when *moderately* similar donors give generously to charity, whereas a lower likelihood of giving and a fewer amount when *highly* similar donors give generously.

Figure 3-1

[The Self-Other Oversimilarity Hypothesis Predictions]

Brief Overview of the Current Study

The current study used a college student sample of 140 participants to test *Self-Other Oversimilarity Hypothesis*. The study used the facial morphing technology to manipulate three different levels of self-other similarity: *Low*, *Moderate*, and *High Similarity*. It then gave participants an opportunity to make a real charitable donation. To our knowledge, this is the first time that researchers have tested the effects of three different levels of similarity on prosocial behavior. (See Figure 3-2 for study flow.)

Figure 3-2

[Study Flow]

The current study is important to both theory and practice. The major contribution of the study is to investigate a curvilinear relationship between similarity and charitable behavior, which will provide a new overarching theoretical understanding of opposing results from prior literature about how individuals respond to others' charitable giving. In practice, most people likely believe that similarity always leads individuals to donate more (and be more likely to donate). However, is there a certain amount of similarity that is too much? This study will investigate the effect of similarity at different levels including a high level of similarity that could be too much and could backfire in charitable giving. Thus, the findings from this study will fill the literature gap and provide useful implications to nonprofit fundraising practice in the future.

Method

Participants and Design

The current study recruited 140 fluent English-speaking students over the age of 18 from a Midwestern urban university campus for a four group experimental study

conducted between March 31st 2016 and July 18th 2017 (Mean age=22.6, SD=5.4, range=18 to 58). The final sample was 76% female, with an ethnic distribution of: 56% Caucasian, 24% Asian, 18% African-American, and 2% Hispanic/Latino.

Sensitivity Power Analysis

We used G*Power 3.1 software to conduct a sensitivity power analysis at $\alpha=.05$ (two-tailed) with a power of .80. The results indicated that our sample size of 140 was sufficient to detect an intermediate effect size of Cohen's $d=.0566$ ($\eta^2=.07$) or larger with 80% power for a simple design of four conditions.

Procedures

Cover story. Participants were told that this study examined online social interactions, and that in order to protect their confidentiality experimenters scheduled participants at different individual sessions. Experimenters told them that they would be taken a photo, and then they might be paired with a participant from a previous session for an online social interaction, and that their photo might be used for future sessions on a random basis. During debriefing, all participants reported believing the cover story. Participants were paired with a hypothetical other person to control confounding variables, by matching participants and the other person on gender, ethnicity, age, hair style, and (neutral) facial expression. Eight standard photographs were taken from the Chicago Faces Database to represent four major ethnic groups (Asian, Black, White, and Latino) in both genders. These eight standard photographs were converted into US visa photo size and stored in the lab computer for manipulating different levels of self-other facial similarity.

Self-other facial similarity manipulation. This study borrowed the similarity manipulation from a prior study finding that individuals are more likely to vote for a political candidate whose face appears similar to their own (Bailenson, Iyengar, Yee, & Collins, 2009). This experiment adopted similar manipulation methods using the facial morphing software, Magic Morph, to morph a participant's photograph with a hypothetical donor's photograph in the following combinations, to which participants were randomly assigned (See Table 3-2). Specifically, in the *No Information* (control) condition, participants completed the donation task without any information about another donor. In the *Low Similarity* condition, participants saw an unmorphed photograph of a hypothetical donor and were given information about his/her donation amount which was 80% of the study payment. In the *Moderate Similarity* condition, participants saw a photograph that consisted of 25% of themselves and 75% of the hypothetical donor. They were also given information about his/her donation amount. In the *High Similarity* condition, participants saw a photograph that consisted of 49% of themselves and 51% of the hypothetical donor. They were also given information about his/her donation amount.

Table 3-2

[Different Experimental Morphing Combinations]

Figure 3-3 shows two sets of examples using two research assistants' photos on the right column to represent participants' original photos. The hypothetical standard donors' photos on the left column represent the unmorphed photos of the other donor that participants would see on the computer screen in the *Low Similarity* condition. The middle two columns represent morphing examples in the *Moderate Similarity* condition

(25% from the research assistants and 75% from the hypothetical donor) and in the *High Similarity* condition (49% from the research assistants and 51% from the hypothetical donor) respectively.³

Figure 3-3

[Morphing Examples]

Morphing procedures and pre-survey. After providing consent, participants' color photographs were taken using a digital camera and ensuring that all participants had a standard presentation (i.e. no facial hair, hair tied back, and neutral facial expression). While the researcher was morphing participants' photographs in a back room, participants completed a paper-based pre-survey with a number of measures.

The morphing steps were as follows. First, the researcher selected a standard hypothetical donor's photograph, matched to participants' gender and ethnicity. Next, the researcher resized the participant's photo into a standard visa photo size at a free online photo generator website (<https://www.persofoto.com/upload/visa-photo>). Then, the researcher used the morphing software, Magic Morph, to morph the participant's photo

³ We chose 49% morphing as the highest percentage of the participants' faces based upon piloting that participants started noticing they are in the morphed photo if it was morphed too high from their own photo. In order to ensure that the photo in the high morphing condition did not cause participants to feel skeptical or uncomfortable, we surveyed participants about their experiences after we completed the data collection. All the surveyed participants indicated that they believed our cover story that the "hypothetical donor" they saw on the computer screen was a "real" other student on campus and no one ever suspected that the picture was morphed with the photo of themselves. In addition, if participants felt skeptical or uncomfortable of an "over-morphed" photo, it would be reasonable to expect a significant drop in their Liking and Attraction ratings in the high similarity condition compared to those in the moderate similarity condition. However, our analysis Liking and Attraction indicated that there was only a marginally statistical difference between the Moderate and High conditions, $t(68)=-1.66$, $p=.10$, 95% CI [-0.88, 0.08], yet the difference of Liking and Attraction was very significant between the Low and Moderate condition, $t(72)=3.38$, $p=.001$, 95% CI [0.33, 1.26]. This result indicated that participants' ratings of liking and attraction towards the hypothetical donor increased significantly when the morphing percentage increased from 0% to 25% but did not change much when the morphing percentage increased from 25% to 49%. Thus, it is reasonable to believe that it is very unlikely that participants found "odd" of the photo in the High similarity condition.

with a hypothetical donor's photo in three different combinations for the three similarity conditions: the *Low Similarity*, the *Moderate Similarity*, and the *High Similarity* condition. After the morphing was complete, the researcher uploaded the morphed photographs to the Qualtrics survey program, which randomly assigned participants to one of the four conditions. Thus, researchers were blind to experimental condition. Only participants assigned into one of the similarity conditions saw a hypothetical donor's photo.

The presurvey included the following two key measures, along with some filler tasks that allowed the researcher enough time to morph the photograph. The 18 item *Prosopagnosia Index* assessed participants' self-reported ability to recognize faces (e.g. "*My face recognition ability is worse than most people*;" Cronbach $\alpha=.96$ (Shah, Gaule, Sowden, Bird, & Cook, 2015). The 10 item *Marlowe-Crowne Social Desirability Scale* assessed participants' concerns about looking good using a true-false inventory (e.g. "I never hesitate to go out of my way to help someone in trouble" (Strahan & Gerbasi, 1972).

Online charitable donation decision. Participants next completed a computer-based charitable donation task, in which they were randomly assigned to one of the experimental conditions. Except for those in the control condition, participants saw a hypothetical donor's photograph (named "Alex") with the information that Alex (who was gender and ethnicity matched to them) had donated 80% of his/her study payment⁴ to

⁴ We report results in terms of donation percentage of the payment for the fact that the payment was increased. For the first 26 participants, we provided the payment of \$10. However, the recruitment process was very slow because of the low payment. So, we revised the payment to \$15 for the rest of participants, which made the recruitment process much faster. The payment change (from \$10 to \$15) did not have an effect on donations, $F(1, 139)=.98, p=.33$.

the Road for Recovery (local program of the American Cancer Society⁵), which provides cancer patients with taxi rides to attend their cancer treatment appointments.

Participants were also asked to rate different items so that the following variables could be measured. First, for *Perceived Self-Other Similarity*, participants were asked to rate their facial similarity with the hypothetical donor they saw on the screen on a Likert scale ranging from 1 (“not at all”) to 7 (“extremely”). Then participants were asked to select their sense of self-other overlap by choosing one figure from seven in which two circles overlapped at different degrees from no overlap to extremely high overlap (Aron et al., 1991). These items were averaged into a single measure (Cronbach $\alpha=.64$). Second, for *Liking and Attraction*, participants were asked to rate their liking and attraction of the hypothetical donor using a Likert scale from 1 (“not at all”) to 7 (“extremely”), which were averaged into a single score (Cronbach $\alpha=.57$). Finally, participants were asked to rate the *impact* of their donations to the local program and to the community using a Likert scale from 1 (“not important at all”) to 7 (“extremely important”). These were averaged into a single item (Cronbach $\alpha=.89$).

Next, participants were asked whether they would like to make a donation today as well. Participants were given an option to make a donation to the same program as the hypothetical donor by entering a pledge in the online survey that could range from \$0 to the full study payment amount, in 25-cent increments.

⁵ We chose the American Cancer Society as the recipient organization for two reasons. First, in a pilot study, we found that students were reluctant to give unless they were asked to give to a specific recipient or organization. Second, in a pilot study, the American Cancer Society was rated most positively out of several top ranking charities, perhaps because it has been involved in fewer scandals compared to other charities such as the American Red Cross and United Way.

Post-survey. The paper-based post-survey contained questions regarding participants' previous familiarity with the *American Cancer Society*, the *Road for Recovery Program*, and their past experiences with cancer patients as well as some demographic questions (i.e. age, ethnicity, and gender).

Participants' *Previous Familiarity* was measured by summing up 13 different items on a binary choice "yes" or "no," (i.e. "Have you ever heard of the American Cancer Society," "Have you ever made a donation to the American Cancer Society," or "Is there someone who is close to you who had cancer?") In addition, participants also reported their frequency of hearing about the American Cancer Society and the Road for Recovery before participating in the study (1=very few times or never, 5=several times a day). We standardized and combined the binary measures and the frequency measures into a single familiarity item (Cronbach $\alpha=.79$).

Actual giving behavior. Finally, participants received their full payment in an envelope, in a combination of four quarters and the rest one dollar bills. In order to assure participants that the donation was voluntary and anonymous, the researcher asked participants to leave whatever amount they pledged in the envelope and to put the envelope back in a black donation box (even if the envelope was empty). The black donation box was placed on one side of the lab and the researcher sat behind a wall and was unable to see the donation process. Participants were told that another researcher would come later to collect all the donation envelopes and the current researcher would not know whether the participants donated or how much they left in the envelope. 100% of participants' donations were donated to the American Cancer Society at the end of the study.

In our study, we measured the variables for the manipulation check (Perceived Facial Similarity and Self-Other Overlap) and variables that we expected to be mediators (Liking, Attraction, and Beliefs of the Donation Impact) before measuring the online donation pledge and the actual donation behavior because such an order would allow us to examine whether our manipulation of similarity is successful and what the potential underlying process of the similarity effects on donation behavior is.

Results

Descriptive Statistics

Among the 140 participants, 102 (73%) donated and 38 (27%) did not. Among donors, the average donation was 29% of their study earnings ($SD=0.28$). There were no gender differences in the decision to donate, $\chi(1)=.30$, $p=.59$, Males=77%, Females=72%. There were also no differences by ethnicity, $\chi(3)=1.56$, $p=.67$, Caucasian=73%, Asian=76%, African-American=68%, and Hispanic/Latino=100%.

Manipulation Check

In order to ensure that our manipulation through facial morphing was effective, we ran an ANOVA on Perceived Self-Other Similarity, $F(2,103)=7.53$, $p<.001$, $\eta^2=.13$, 95% CI [0.03, 0.24]: High Similarity: $M=4.19$ $SD=1.40$, $n=31$; Moderate Similarity: $M=3.47$, $SD=1.02$, $n=38$; and Low Similarity: $M=3.06$, $SD=1.18$, $n=35$. Post-hoc pairwise comparisons indicated that participants in the High Similarity condition felt more similar to the hypothetical donor that they saw on the computer screen than participants in other two conditions (High VS Low, $t(65)=3.85$, $p<.001$, 95% CI [0.55, 1.72] ; High VS Moderate, $t(68)=2.49$, $p=.02$, 95% CI [0.15, 1.30]). Even though the average Perceived Self-Other Similarity was higher in the Moderate condition than in the

Low Similarity condition, these conditions were not significantly different from each other, $t(72)=1.49$, $p=.14$, 95% CI [-0.14, 0.97] (See Figure 3-4).

Figure 3-4

[Manipulation Check on Perceived Self-Other Similarity]

Randomization Check

The randomization process was first checked to ensure its effectiveness by confirming that no statistical significant differences existed across conditions.

Prosopagnosia Index. This index measures participants' facial recognition (Cronbach $\alpha=.92$). This ability is only relevant to the three conditions where participants saw the other donor, thus, our analyses focus on these three conditions. There were no differences between these three conditions in facial recognition, $F(2,103)=2.00$, $p=.82$.

Social Desirability Scale. A check was conducted to investigate the differences in participants' desire to look good (Cronbach $\alpha=.50$) across all four conditions (three similarity conditions and the control condition). There were no differences across conditions in social desirability, $F(3,139)=.86$, $p=.46$.

Previous Familiarity. This measure captured participants' previous familiarity with the recipient nonprofit organization and the program in this study (the American Cancer Society and the Road for Recovery) as well as their previous experiences with cancer patients (Cronbach $\alpha=.79$). A check was conducted to investigate the differences of participants' self-reported previous familiarity across all four conditions. There were no differences across the four conditions in previous familiarity, $F(3,139)=1.77$, $p=.16$.

Effect of Condition on Decision to Donate

An omnibus Chi Square analysis was conducted to examine the effect of condition on participants' decision to donate (1=*donated*, 0=*did not donate*). This test confirmed that there was a statistically significant difference between the highest and the lowest conditions, $\chi(3)=8.33$, $p=.04$. The results are presented in order from the highest to the lowest percentage of donors: *Moderate Similarity* (86.84%), *Low Similarity* (77.14%), *High Similarity* (67.74%), *No Information* (58.33%) (See Figure 3-5).

Figure 3-5

[The Percentage of Participants Donated across Conditions]

However, a planned pairwise comparison was needed to test our specific hypothesis that in the *Moderate Similarity* condition, participants would be more likely to donate compared to participants in all other conditions. Thus, a dummy variable was created that compared *Moderate Similarity* to all other similarity conditions combined, and found that there was indeed a statistically significant result, $\chi(1)=5.16$, $p=.02$. In order to examine all six pairs of comparisons on any two conditions, we used a binominal logit model. The pairwise comparisons based upon the binominal logit regression indicated that the probability of donating in the *Moderate Similarity* condition was higher than it in the *No Information* condition, $p=.008$. The differences were statistically marginal in two pairs: (1) *Low Similarity* was marginally higher than the *No Information* condition, $p=.09$ and (2) *High Similarity* was marginally lower than the *Moderate Similarity* condition, $p=.06$ (See Table 3-3). Overall, the results suggest a curvilinear pattern on decision to donate as hypothesized (See Figure 3-5).

Table 3-3

[Post-pairwise Comparisons of Binominal Logit Models]

Effect of Condition on Percentage Donated

Next, the ANOVA was conducted to examine the effect of condition on the percentage of the study payment donated (see Figure 3-6). An omnibus ANOVA result on the full sample, including both donors and non-donors, indicated that the highest average percentage donated was significantly different from the lowest percentage donated, $F(3,139)=3.54, p=.02, \eta^2=.07, 95\% \text{ CI } [0.002, 0.15]$. The average percentage donated is presented in order: *Moderate Similarity*: $M=0.30, SD=.28, n=38$; *Low Similarity*: $M=0.23, SD=.28, n=35$; *No Information*: $M=0.18, SD=.30, n=36$, and *High Similarity*: $M=0.11, SD=.15, n=31$. The post-hoc pairwise comparisons indicated there were statistically significant differences in two pairs: (1) participants in the *Moderate Similarity* condition donated significantly more of their study payment than participants in the *No Information* condition, $t(73)=2.07, p=.04, 95\% \text{ CI } [0.01, 0.25]$. Yet (2) participants in the *High Similarity* condition donated significantly less of the study payment than participants in the *Moderate Similarity* condition, $t(68)=-3.14, p=.003, 95\% \text{ CI } [-0.32, -0.07]$. In addition, participants in the *High Similarity* condition donated marginally less of the study payment than participants in the *Low Similarity* condition, $t(65)=-1.93, p=.06, 95\% \text{ CI } [-0.25, -0.003]$.

The same procedures were used to investigate the sample that only included donors. An omnibus ANOVA test yielded the same pattern as we obtained from the full sample, but was only close to marginally significant, $F(3,101)=2.27, p=.09, \eta^2=.07, 95\% \text{ CI } [0.00, 0.15]$. In the donor only sample, we found evidence to support the backfiring

effect of oversimilarity on percentage of study payment donated: donors in the *High Similarity* condition donated statistically and significantly lower than donors in the *Moderate Similarity* condition, $t(68)=-2.56, p=.01$, 95% CI [-0.71, -0.96]. In addition, donors in the *High Similarity* condition donated marginally less than donors in the other two conditions (*High Similarity VS No Information*, $t(66)=-1.79, p=.08$, 95% CI [-0.73, -1.02]; and *High Similarity VS Low Similarity*, $t(65)=-1.80, p=.08$, 95% CI [-0.74, -1.02]).

Figure 3-6

[The Percentage of Study Payment Donated across Conditions]

Robustness Check of the Results

The randomization check confirmed that participants' facial recognition (*Prosopagnosia Index*), desire to look good (*Social Desirability Scale*), and familiarity with the organization and cause (*Previous Familiarity*) were not significantly different across conditions. Yet, they may be factors that could potentially affect individuals' charitable donations. Thus, these three variables were added as covariates in the above analyses to check the robustness of the condition effect on the two measures of charitable giving. The results based upon a Logit regression (decision to donate as the dependent variable) indicated that both the condition effect and participants' desire to look good were statistically significant predictors: $Z=2.36, p=.02$ (*Moderate VS No Information*), $Z=-1.79, p=.07$ (*Moderate VS High*) and $Z=2.73, p=.01$ (*Social Desirability*). In addition, the results based upon ANCOVAs (percentage donated as the dependent variable) indicated that the effect of condition was still significant on the full sample, $F(3,139) = 3.05, p=.03$ and close to the marginal significance on the donor only sample, $F(3, 101) = 2.15, p=.099$, while none of the three covariates were statistically significant predictors,

$ps > .13$ (See Table 3-4). In short, the effect of condition did not change after adding the covariates (*Prosopagnosia Index*, *Social Desirability Scale*, and *Previous Familiarity*), which suggest that these results were robust.

Table 3-4

[Robustness Check of the Results]

Effect of Condition on Liking and Attraction

An ANOVA was conducted to examine the effect of condition on *Liking and Attraction*. The ANOVA was significant, $F(2,103)=5.72$, $p=.004$, $\eta^2=.10$, 95% CI [0.01, 0.21] and the results are presented in order from the highest to the lowest: *Moderate Similarity*: $M=4.43$, $SD=.97$, $n=38$; *High Similarity*: $M=4.03$ $SD=1.00$, $n=31$; and *Low Similarity*: $M=3.64$, $SD=1.02$, $n=35$. Post-hoc pairwise comparisons indicated that participants in the *Moderate Similarity condition* reported higher *Liking and Attraction* towards the hypothetical donor than participants in the *Low Similarity condition*, $t(72)=3.38$, $p=.001$, 95% CI [0.33, 1.26] (See Figure 3-7). Yet, there was no difference in *Liking and Attraction* between *High Similarity* and *Moderate Similarity condition*, $t(68)=-1.66$, $p=.10$, 95% CI [-0.88, 0.08] and between *High* and *Low Similarity*, $t(65)=1.58$, $p=.12$, 95% CI [-0.10, 0.08]. The findings confirmed a positive effect of similarity on *Liking and Attraction* when similarity moved from a low to a moderate level, yet the results did not provide strong supporting evidence for a backfiring effect of similarity on *Liking and Attraction* when similarity kept increasing. Therefore, we are unable to examine the mediating role of *Liking and Attraction* in a curvilinear relationship between similarity and donations in this study.

Figure 3-7

[Effects of Condition on Liking and Attraction]

Effect of Condition on Beliefs About Donation Impact

An ANOVA was conducted to examine the effect of condition on *Beliefs about Donation Impact*. The ANOVA was significant based upon the p-value but not significant based upon the 95% confidence interval, $F(2,103)=3.53$, $p=.03$, $\eta^2=.07$, 95% CI [0.00, 0.16], suggesting that at least one pair comparison might be significant. The results are presented in order from the highest to the lowest impact: *Moderate Similarity*: $M=3.74$, $SD=1.34$, $n=38$; *Low Similarity*: $M=3.64$, $SD=1.85$, $n=35$; and *High Similarity*: $M=2.81$ $SD=1.45$, $n=31$. Post-hoc pairwise comparisons indicated that the *Beliefs about Donation Impact* in the *High Similarity condition* was significantly lower than the other two conditions (*High VS Low Similarity condition*, $t(65)=-2.17$, $p=.03$, 95% CI [-1.60, -0.07], and *High VS Moderate Similarity condition*, $t(68)=-2.46$ $p=.02$, 95% CI [-1.68, -0.18] (See Fig. 3-8). The findings suggested a backfiring effect of similarity on the *Beliefs about Donation Impact* when similarity became too high, yet the results did not confirm a positive effect of similarity when similarity moved from a low to a moderate level. Therefore, there is also no strong supporting evidence for the mediating role of *Beliefs about Donation Impact* in a non-linear relationship between similarity and donations.

Figure 3-8

[Effects of Condition on Beliefs about Donation Impact]

Discussion

Although much research has found that similarity to self has a positive influence on a variety of behaviors, including prosocial behaviors, very little research has suggested that too much similarity could have a negative influence. The current paper added to this literature by examining how different levels of similarity to self (low, moderate, high) among donors could affect charitable giving. With respect to charitable donations, the study found that when other donors were moderately similar to the self, participants were more likely to donate to charity (and gave more; See Fig. 5 and 6). However, when other donors were high in similarity to the self, participants were actually *less* likely to give (and gave less) to charity. The results of this study were robust to social desirability, degree of self-reported face-blindness (prosopagnosia), and previous familiarity with the organization and cause. Taken together, this suggests that there can be a such thing as too much similarity to the self in these types of interactions, and people should not assume that more similarity will necessarily lead to more giving in the presence of other generous donors.

Byrne's (1961) Similarity Attraction Theory may help to explain why moving from low to moderate similarity led to increased charitable donations in the presence of a generous donor. Indeed, we found that participants liked the other participants more in the moderate similarity condition compared to the low similarity condition. However, according to that theory, even more similarity should have an even greater positive effect on donations, yet in fact, in the current study, donations were less likely (and were smaller) in the highest similarity condition. Indeed, participants reported liking the other participants *less* in the high similarity condition according to the comparisons of group

means (See Fig. 7), indicating that too much similarity might cause lower attraction and liking compared to similarity at moderate levels, which is contradictory to the prediction based upon Similarity Attraction Theory. However, since our results of the condition effect on attraction and liking was close to marginal significance, more future studies are needed to better understand whether there is a potential negative effect of similarity on attraction and liking, which may lead to lower donations.

A better explanation for our results is provided by Optimal Distinctiveness Theory (Brewer 1991). Perhaps when individuals see that highly similar others have already donated generously, they would want to distinguish themselves or their contribution from others, and thus may donate less (or be less likely to donate). In addition, if individuals believe that they have already given via a substitution effect, then there should be no more reason to give, and the impact of any donation they make should be perceived as lower. Indeed, participants in the high similarity condition rated the impact of their donation as lower than those in the low and moderate similarity conditions (See Figure 3-8).

Strengths, Limitations, and Future Research

To date, the curvilinear relationship between similarity and charitable giving has received limited attention in prior research since, to our knowledge, little evidence has confirmed the negative effects at high similarity levels, and no study has yet investigated the similarity effects at different levels on prosocial behavior. In order to fill this gap in the literature, our study used an innovative approach, facial morphing, to manipulate different levels of similarity to other donors to investigate the potential curvilinear effects of similarity on prosocial behavior. Our study findings indicate that the facial morphing

manipulation works not only in the political voting contexts but also in the charitable giving contexts. Although we manipulate three levels of similarity, which is rarely done in the literature, in our future studies, we will examine even more similarity levels, to help determine the threshold point of too much similarity.

When interpreting our results, readers should be aware that they are based on a situation in which the other donors gave generously and that they are also based on a sample of college students. Thus, future research is needed to determine if these results would generalize in other conditions, such as when others donate stingily, and in other samples beyond college students. Future studies should replicate and extend these results, and try to better understand why they occur.

In addition, this study examines the potential for too much similarity in the context of donor-donor dyads. But future studies are needed in order to examine whether this theory is generalizable to other charitable giving contexts, such as donor-recipient or donor-solicitor dyads. Since research has also indicated a positive effect of similarity on other behaviors such as compliance, consumer behaviors, aggression, and dating (See Introduction), future research should also go beyond the charitable giving context to see whether there is a such thing as too much similarity in these domains as well. We think that over-similarity may be a general principle that would likely apply to a variety of contexts, but future research will help to determine this.

Additionally, we indented to examine the underlying process of the similarity effect on donation behavior by investigating the relevant measures, such as *Liking*, *Attraction* and *Donors' Beliefs of Donation Impact* in our study, because the literature suggested that those might be the mediator factors. However, we did not find strong

supporting evidence that these factors played a mediating role in explaining the curvilinear relationship between the similarity and donation behavior in our study. Based upon these unexpected findings, it is still unclear regarding what caused a curvilinear effect of similarity on donations. It is possible that the positive and negative effects of similarity on donation could be caused by two different mechanisms (e.g. *Liking and Attraction* to explain a *positive* similarity effect and *Donor's Beliefs of Donation Impact* to explain a *negative* similarity effect) and more future research is needed to investigate this possibility.

In terms of the real world implications of the study findings, this study suggests that nonprofits should be careful when they use similarity to encourage donations, because too much similarity could potentially backfire in charitable giving. Until more research is conducted, nonprofits should aim for moderate similarity (e.g. same gender; see Shang et al, 2007) when encouraging donations, but avoiding high similarity.

Conclusion

This paper addressed some gaps in the literature by positing a curvilinear relationship between donor-donor similarity and one kind of prosocial behavior, charitable giving. Research finds positive relationships between similarity and a variety of behaviors. Yet, comparatively little is known about whether individuals could respond negatively to others' generous donations when they are too similar to the self. What we do know, based upon the results of this paper, is that there is not a simple linear and positive relationship, but rather a curvilinear relationship, between self-other similarity and charitable giving. That is, too much similarity between donors can sometimes backfire when others give generously. However, it is unclear whether too much similarity

between donors could promote giving when others give *stingily*. In order to test self-other oversimilarity hypothesis in different charitable giving contexts, Chapter 4 of my dissertation proposes a new study to investigate whether individual would give more or less in the presence of a *stingy* donor at different self-other similarity levels.

Table 3-1: Coding Criteria of Similarity

	Awareness of Shared Identity	Number of Shared Identities	Importance of Shared Identity	Self-Other Overlap
<i>No Similarity</i>	No	No OR Maybe	N/A	No
<i>Low Similarity</i>	Yes for shared identity OR Yes for Mismatched identity	1	Low for shared identity OR High for Mismatched identity	No
<i>Moderate Similarity</i>	Yes	1 or more	High	No
<i>High Similarity</i>	Yes	More than 1	High	Yes

Table 3-2: Different Experimental Morphing Combinations

Conditions	Features % from a Hypothetical Donor	Features % from a Participant
<i>No Information Condition</i>	No information about another donor	No information about another donor
<i>Low Similarity Condition</i>	100	0
<i>Moderate Similarity Condition</i>	75	25
<i>High Similarity Condition</i>	51	49

Table 3-3: Post-pairwise Comparisons of Binominal Logit Models

	Pairwise Comparisons w/o Controls (Marginal Odds Ratios)
<i>Low Similarity VS No Information</i>	2.41~
<i>Moderate Similarity VS No Information</i>	4.71**
<i>High Similarity VS No Information</i>	1.50
<i>Moderate Similarity VS Low Similarity</i>	2.00
<i>High Similarity VS Low Similarity</i>	-0.63
<i>High Similarity VS Moderate Similarity</i>	-0.32~

Note: ~ (p< .10), *(p< .05), and **(p< .01)

Table 3-4: Robustness Check of the Results

	Decision to Donate (Logit)	Percentage Donated (ANCOVA)-All Participants	Percentage Donated (ANCOVA)-Donors Only
<i>Condition</i>	$p=.018^*$ (Moderate VS No information), n.s. (other pair comparisons)	$p=.03^*$	$p=.098\sim$
<i>Prosopagnosia Index</i>	$p=.124$	$p=.13$	$p=.35$
<i>Social Desirability Scale</i>	$p=.006^{**}$	$p=.33$	$p=.41$
<i>Previous Familiarity</i>	$p=.229$	$p=.85$	$p=.70$

Note: \sim ($p < .10$), $*$ ($p < .05$), and $**$ ($p < .01$)

Figure 3-1: The Self-Other Oversimilarity Hypothesis Predictions

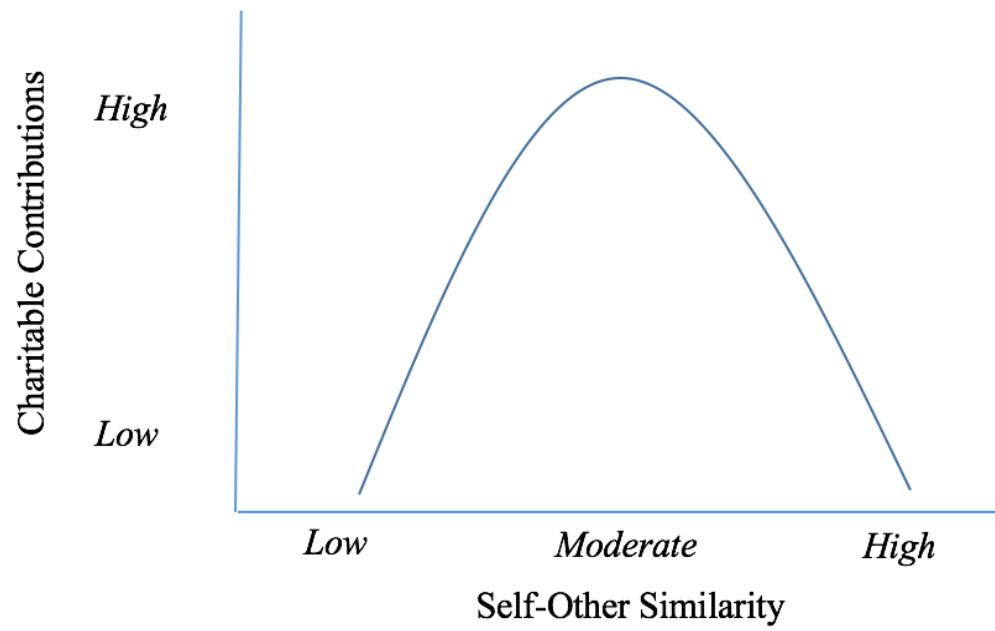


Figure 3-2: Study Flow

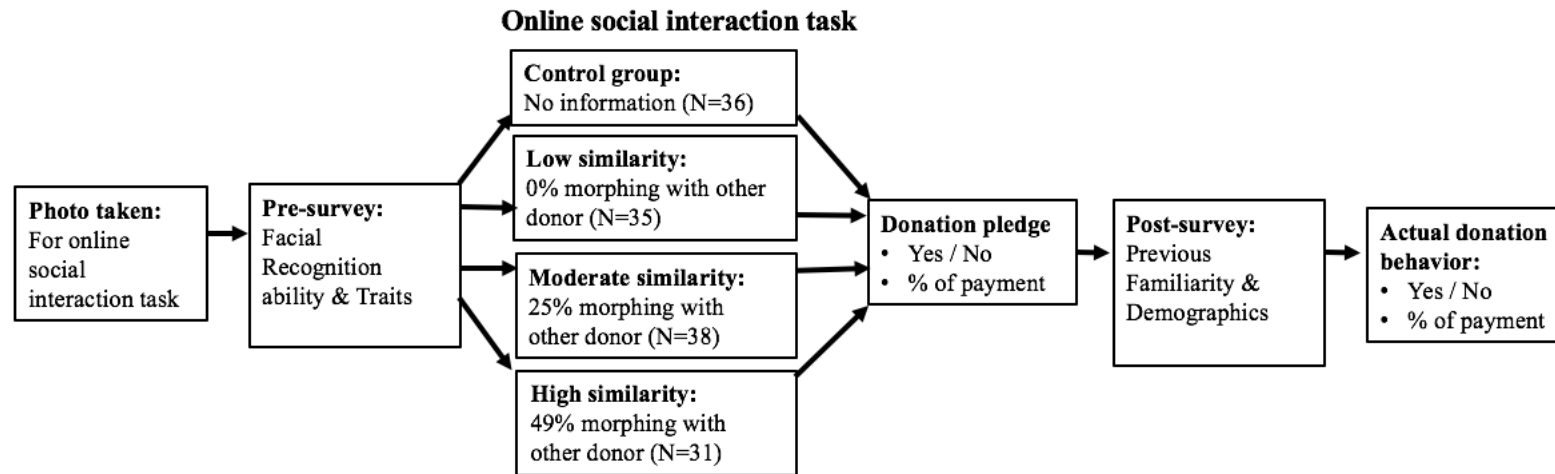
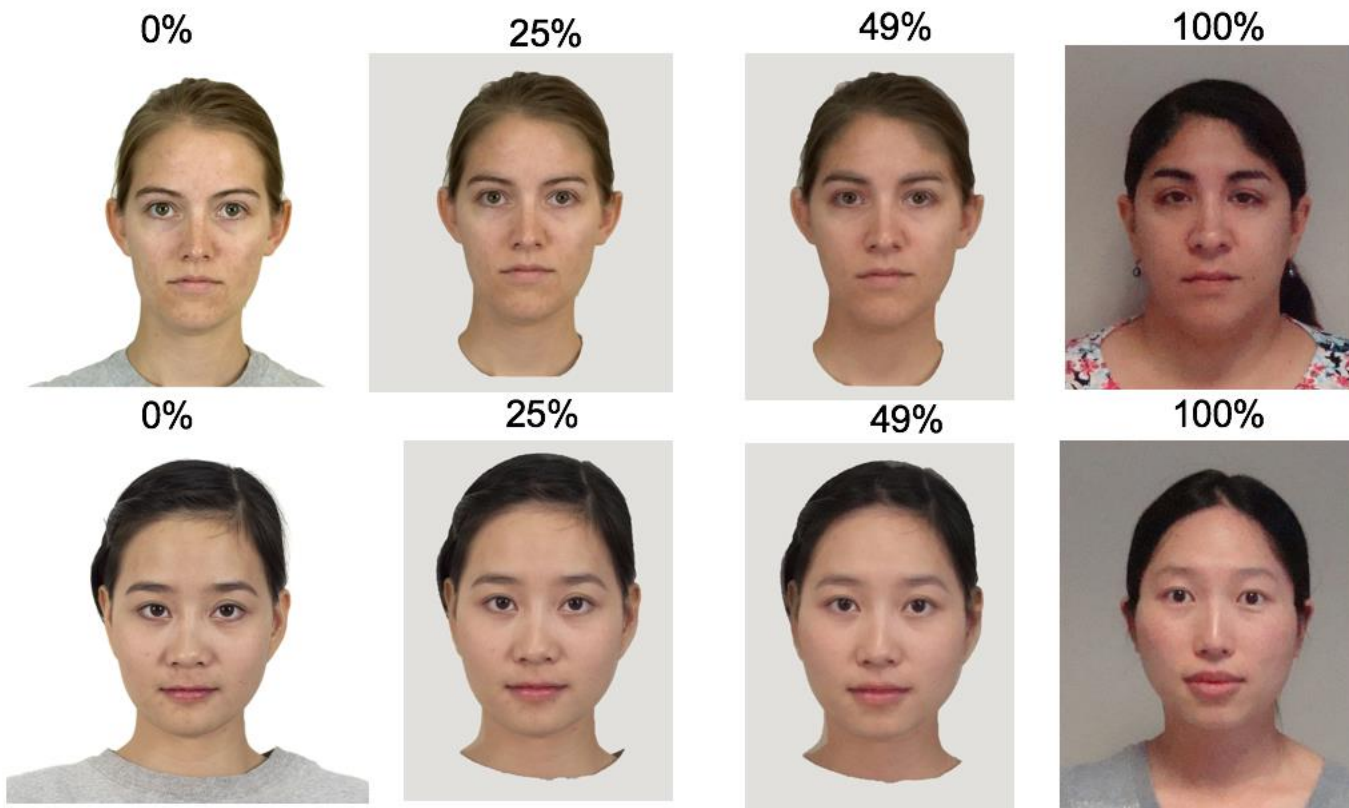


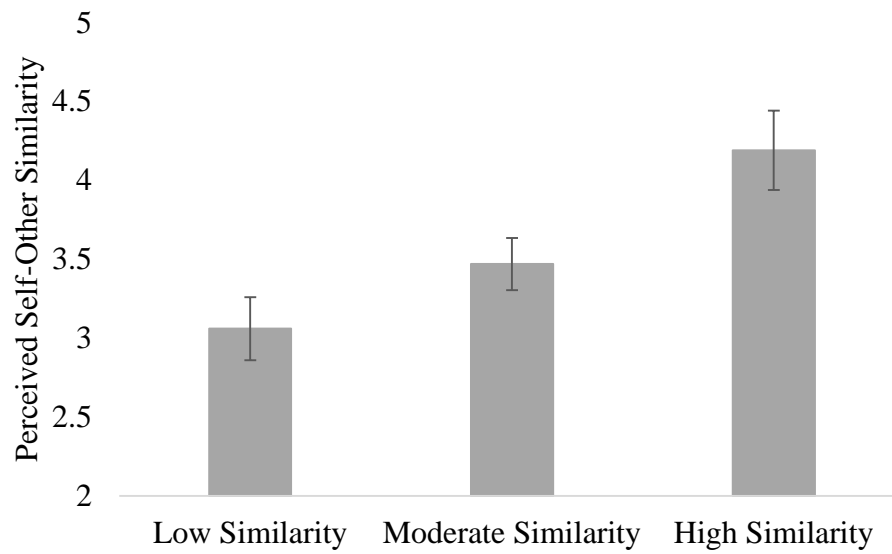
Figure 3-3: Morphing Examples



Standard Photo

Participants

Figure 3-4: Manipulation Check on Perceived Self-Other Similarity



Note: Averaged of participants' rated facial similarity and psychological self-other overlap across three conditions that had a photograph of the other donor. Error bars corresponding with 95% confidence interval.

Figure 3-5: The Percentage of Participants Donated across Conditions

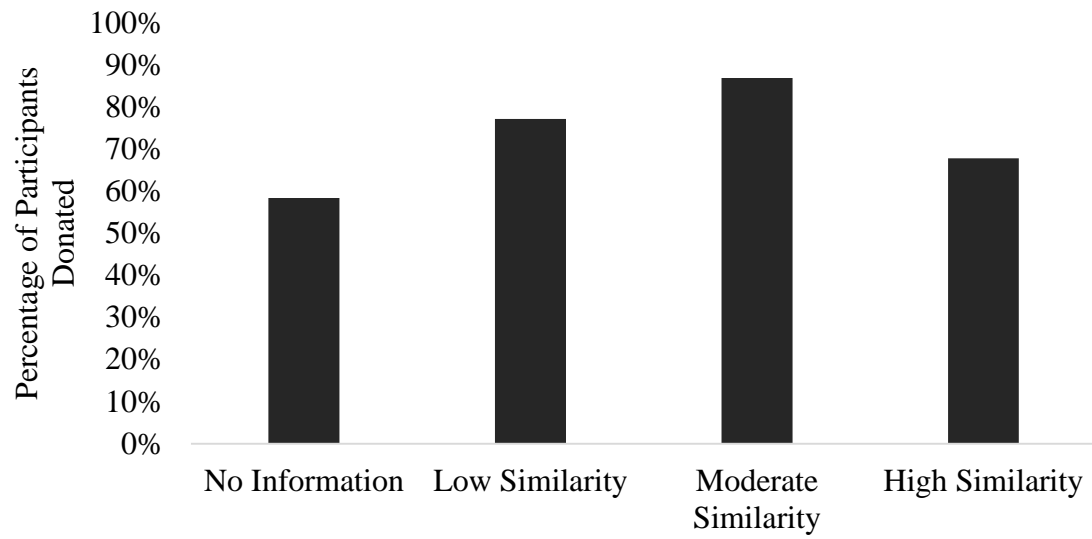
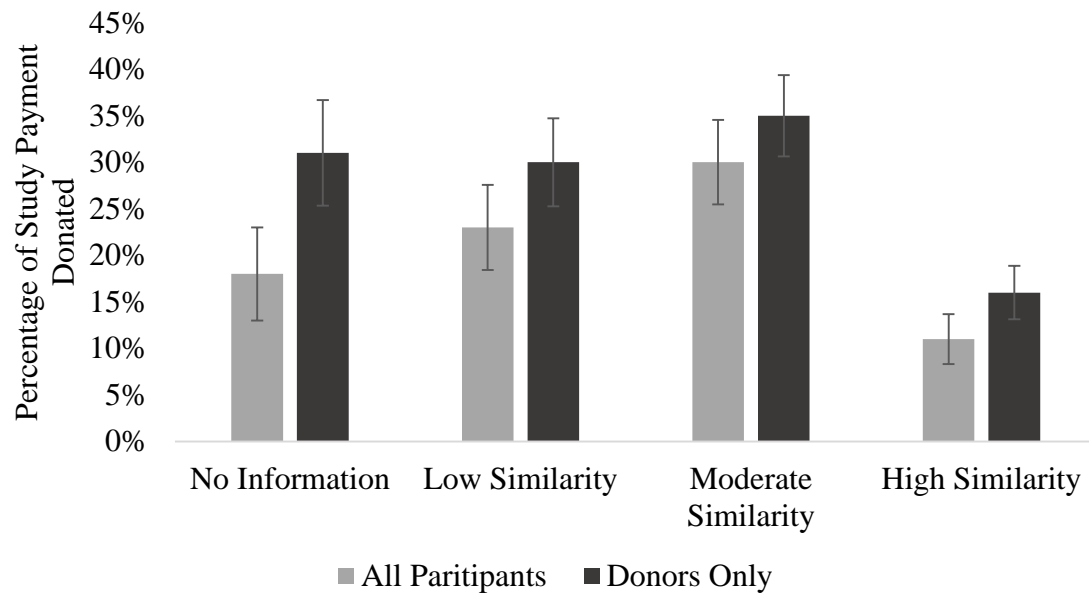
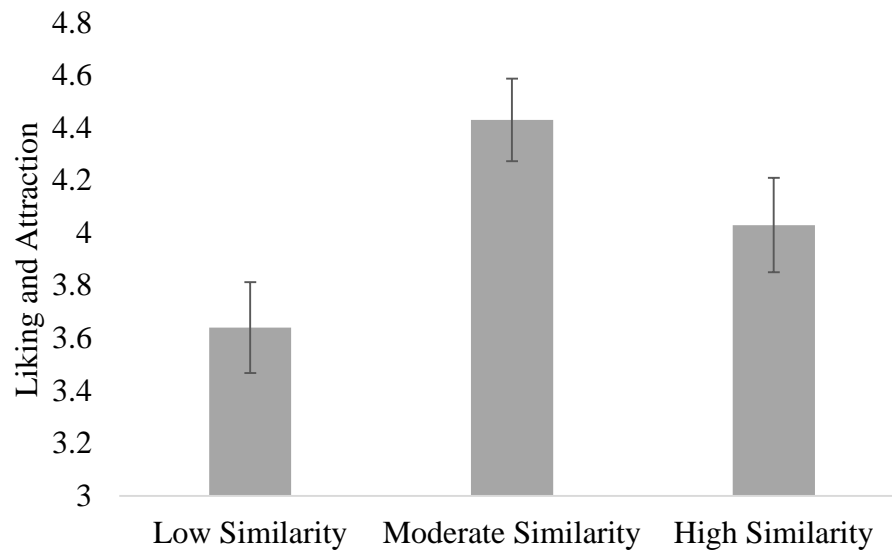


Figure 3-6: The Percentage of Study Payment Donated across Conditions



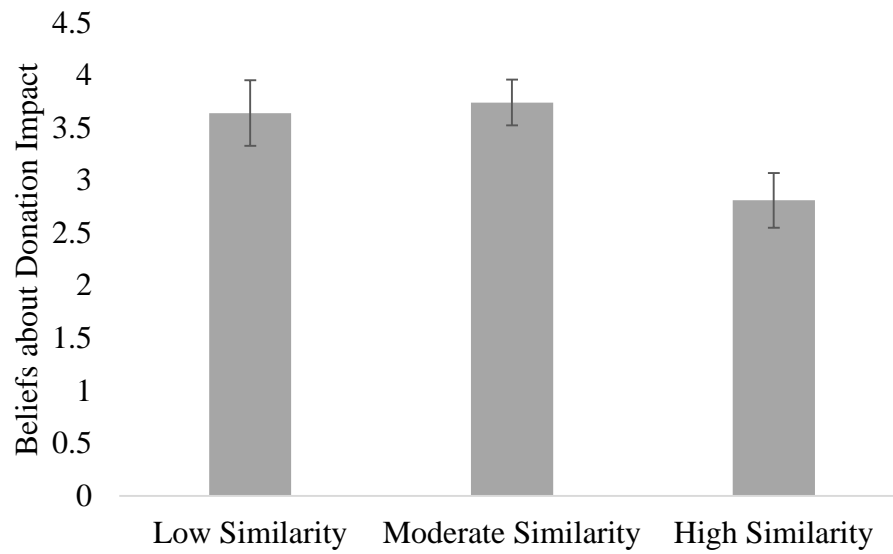
Note: Error bars corresponding with 95% confidence interval.

Figure 3-7: Effects of Condition on Liking and Attraction



Note: Averaged of participants' rated liking and attraction towards the other donor across conditions that had a photograph of the other donor. Error bars corresponding with 95% confidence interval.

Figure 3-8: Effects of Condition on Beliefs about Donation Impact



Note: Across conditions that had a photograph of the other donor. Error bars corresponding with 95% confidence interval.

Chapter 4 DISCUSSION AND A NEW RESEARCH PROPOSAL

How does similarity of other donors to the self affect individuals' charitable giving? Does more similarity necessarily lead people to donate more in the presence of other generous donors? My dissertation used different methodological approaches, a systematic literature review in Chapter 2 and a lab experiment in Chapter 3, to investigate these questions.

The results from a systematic literature review in Chapter 2 indicate an inconclusive relationship between self-other similarity and social influence of others' generous donations on individuals' charitable giving. The systematic literature review identifies the literature gap that no study has been found that manipulates and investigates the effects of similarity at high levels in the charitable giving contexts. People give more (and are more likely to give) when other generous donors are moderately similar to the self. However, it is unclear how a high similarity of other generous donors could affect charitable giving. In addition, results from Chapter 2 indicate that most prior research focuses on a binary comparison of the effect between no similarity and moderate similarity, or between low similarity and moderate similarity. Yet little attention has been paid to investigating a potential negative effect of high self-other similarity on charitable giving. Thus, in order to better understand how similarity plays a role in social influence in a charitable giving context, more research is needed to manipulate similarity of different levels, especially a high level, and investigate potential curvilinear effects of similarity on charitable giving.

In order to investigate how different levels of similarity affect charitable giving, Chapter 3 reports the results of an experimental study that used facial morphing to

manipulate another generous donor's similarity to the self at different levels (Low, Moderate, High). The purpose of this study was to address the literature gap on the relationship between perceived high similarity and social influence on individuals' charitable giving, as well as to build an overarching understanding through connecting mixed research findings regarding individuals' responses to other people's donations. The results of the experimental study confirmed *Self-Other Oversimilarity Hypothesis*, which posits curvilinear effects of similarity on charitable giving. This hypothesis, developed mainly based upon Optimal Distinctiveness Theory, suggests that the strongest positive effect is most likely to occur when others are perceived as moderately similar to the self, whereas a negative effect is most likely to occur when others are perceived as highly similar (i.e. *oversimilar*). Findings from this experimental study contribute to both theory and practice by providing a new understanding of the effect of similarity in charitable giving, with important implications for nonprofit fundraising practices.

Prior research suggests possible factors that can help to explain the possible curvilinear relationship between similarity and social influence on charitable giving. For example, Similarity Attraction Theory suggests that similarity increases interpersonal attraction towards other donors, thus, individuals tend to give more if attractive others give more (Donn Byrne, 1961). Also, individuals may feel their donation has less impact when the cause has been already supported by other donors, thus leading to fewer donations.

Optimal Distinctiveness Theory may help to explain the experimental results in Chapter 3. Specifically, it suggests that individuals have a higher need to *assimilate* other generous donors by donating more when their feelings of similarity move up to a

moderate level. However, individuals have a higher need to *differentiate* themselves from other generous donors by donating less when their feelings of similarity are too high. More studies in the future are needed to determine whether these results could apply to different contexts and to provide more evidence for this proposed explanation. I think the most important next step is to examine the effects of different levels of similarity on a *stingy* donor in a charitable giving context. Do individuals give more or less in the presence of a stingy donor? How do different levels of self-other similarity (Low, Moderate, High) influence individuals' decision-making processes in charitable giving in this context? The next section is a research proposal designed to answer these questions.

Research Proposal on the Most Important Next Study

In this proposal, I will make predictions, based upon Self-Other Oversimilarity Hypothesis, developed from Optimal Distinctiveness Theory, on how an individual would respond to a stingy donor's giving. In order to extend the experimental study in Chapter 3, I will also examine additional relevant theories and make alternative predictions. Therefore, this proposed experimental study is designed to test Self-Other Oversimilarity Hypothesis and other alternative predictions to determine how self-other similarity plays a role in individuals' charitable giving in the presence of a stingy donor.

In a charitable giving context, *other donors'* influence on individuals' charitable giving could depend upon how similar individuals are to *other donors*. Research finds mixed results regarding *donor-donor similarity influence* on individuals' charitable giving (see Chapter 2). On the one hand, a *positive influence of donor-donor similarity* occurs when people are more likely to follow or assimilate to others' giving behavior as the similarity between the self and the other donors increases. For example, individuals

tend to give more when other donors, who are perceived as similar, give generously, which is called an *upward (positive) effect of social influence* (Reingen, 1982). Similarly, individuals tend to give less when other donors, who are perceived as similar, give stingily, which is called a *downward (positive) effect of social influence* (Croson & Shang, 2008). In other words, people's donations can be *positively influenced* in two directions; that is, individuals are *influenced to assimilate* other donors' behavior to either give generously or give stingily, as self-other similarity increases. Specifically, a *positive influence of donor-donor similarity* occurs when individuals tend to give *more* in the presence of a *generous* donor or give *less* in the presence of a *stingy* donor.

On the other hand, a *negative influence of donor-donor similarity* occurs when people are more likely to differentiate their giving behavior from others as their similarity to others increases. For example, individuals tend to donate *less* when a highly similar other has donated *generously*, which can be defined as a *downward negative donor-donor similarity influence* (see Chapter 3) or donate *more* when highly similar others donate *stingily*, which can be defined as an *upward negative donor-donor similarity influence*.

Self-Other Oversimilarity Hypothesis suggests that a *negative* effect may occur when the other donor is perceived as too similar. One limitation of the supportive findings for *Self-Other Oversimilarity Hypothesis* in Chapter 3 is that it was only tested in the presence of a *generous* donor. However, to my knowledge, no empirical evidence is available on an *upward negative donor-donor similarity influence* in the presence of a *stingy* donor. Thus, in order to fill this literature gap on a *negative influence of donor-donor similarity* and provide more empirical evidence for *Self-Other Oversimilarity*

Hypothesis, it is a rational next step to investigate how self-other similarity affects an individual's charitable giving in response to a *stingy* donor's giving.

Self-Other Oversimilarity Hypothesis Prediction

In the experimental study in Chapter 3, *Self-Other Oversimilarity Hypothesis* suggests that the strongest *positive effect* of social influence would occur when other donors are perceived as moderately similar to the self, and a *negative effect* would occur when other donors are perceived as too similar.

In order to better explain the prediction on the *donor-donor similarity* effect on individuals' charitable giving based upon *Self-Other Oversimilarity Hypothesis*, I apply it to a simplified charitable giving context of only two people, an individual (who is asked to give) and the other donor (who has given stingily). This individual is predicted to experience a higher need to *assimilate* to the stingy donor by *giving stingily* when the stingy donor is perceived as moderately similar. However, an individual tends to experience a higher need to *differentiate* from the stingy donor by *giving generously* when the stingy donor is perceived as too similar. In other words, *Self-Other Oversimilarity Hypothesis*, developed based upon Optimal Distinctiveness Theory, predicts a U-shaped relationship between self-other similarity and individuals' charitable giving in the presence of a *stingy* donor.

Self-Other Oversimilarity Hypothesis Prediction: Individuals tend to give a minimal amount in the presence of a stingy donor who is perceived as in low similarity to the self, and give even less when the stingy donor is perceived as moderately similar to the self. However, individuals tend to give more in the presence of a stingy donor who is perceived as highly similar.

Optimal Distinctiveness Theory explains one important mechanism on how similarity affects social influence on charitable giving based upon a model of two competing needs: the need for assimilation and the need for differentiation. In addition to this mechanism, there are a few other possible mechanisms that could help to explain individuals' responses to a stingy donor at different levels of self-other similarity. In order to help to extend the previous work in Chapter 3, I will review other relevant theories, including Social Comparison Theory (Festinger, 1954), Self-Evaluation Maintenance Model (Tesser, 1986, 1988), and Social Proof (Cialdini, 2001a, 2001b) to draw alternative predictions.

Relevant Theories and Alternative Predictions

Social Comparison Theory (SCT) is one of most fundamental social psychology theories. Developed by Leon Festinger in 1954, it explains how an individual evaluates the self by comparing with relevant others, especially in uncertain situations. I will review four of the nine original hypotheses in Festinger's original paper (1954) to draw predictions on individuals' responses to a stingy donor's giving. These hypotheses suggest that people have a basic drive for self-evaluation through objective, nonsocial means (SCT Hypothesis I). If objective, nonsocial means are not available, people evaluate their opinions and abilities by comparing them with others (SCT Hypothesis II). Festinger's hypothesis also suggests that people are more likely to compare themselves with *similar others* (SCT Hypothesis III). In addition, when comparing with a group, individuals will *assimilate* their values and behaviors according to others' values and behaviors within the group to attain uniformity. The more important and attractive the

group is perceived to be by individuals, the higher the tendency for individuals to seek uniformity (SCT Hypothesis VII).

I apply Festinger's four hypotheses reviewed above to the same simplified charitable giving context, which consists of only two people, an individual (the self) and a stingy donor (the other). In this simplified context, it is assumed that the individual strives for a positive self-concept (e.g. high self-esteem) through comparing the self with others. Specifically, when the individual is asked to consider a donation, this individual could rely on nonsocial clues to determine whether to donate and how much to donate (SCT Hypothesis I). These nonsocial clues include different factors, such as solicited amount (e.g. how much is needed), financial constraints (e.g. how much money is available to donate), etc. However, in a situation without enough nonsocial clues for decisive decision making, the individual may refer to the stingy donor's behavior as a social clue to evaluate the generosity of the self through social comparison (SCT Hypothesis II). Since people are more likely to compare the self with similar others, the more similar the stingy donor is perceived, the higher the tendency for the individual to compare the self with the stingy donor (SCT Hypothesis III). In addition, the individual is more likely to follow the stingy donor if the stingy donor is attractive and salient to the self (SCT Hypothesis III&VII). It is as of yet unclear whether a highly similar stingy donor has a *stronger downward positive influence* than a moderately similar stingy donor, which drives the individual to *assimilate* to the stingy behavior by *giving even less*. As empirical evidence suggests, the individual may perceive the stingy donor as less attractive or less close if they are too similar (Snyder & Endelman, 1979). Thus, the individual is less likely to assimilate the stingy donor's behavior. In summary, the

individual is predicted to behave as follows in response to another donor's stingy donations based upon Festinger's original hypotheses in a simplified charitable giving context.

SCT Prediction I: An individual tends to be influenced by a stingy donor on charitable giving, especially when not enough nonsocial clues are available to help with the decision making (SCT Hypothesis I & II).

SCT Prediction II: An individual is more likely to assimilate a stingy donor's behavior as self-other similarity increases only when the stingy donor is perceived as attractive or salient. The most straightforward prediction is that the more similarity to the other donor, the more stinginess (i.e. linear decrease in giving). However, it is unclear how the stingy donor would influence the individual's giving if the stingy donor is perceived unattractive due to too much similarity (SCT Hypothesis III & VII).

The **Self-Evaluation Maintenance Model (SEM)** was developed by Abraham Tesser in 1988 based upon *Social Comparison Theory* in a model of two people. SEM suggests that an individual attempts to maintain a positive self-evaluation through comparing the self to the other person, and this comparison can either enhance or threaten self-evaluation (e.g. self-esteem or self-regard) (Tesser, 1986, 1988).

Research has identified three important factors that help to determine how the other person's good performance affects individual's self-evaluation: the *psychological closeness of the other*, the *quality of the other's performance*, and the *relevance of the other's performance to an individual's self-identification* (Tesser, 1988). According to SEM, a *good* performance by a *close* other can either positively or negatively affect individual's self-evaluation, depending on the *relevance* of the performance. Specifically,

when the relevance is high, a close other's good performance will threaten an individual's self-evaluation; yet, when the relevance is low, a close other's good performance will enhance an individual's self-evaluation. For example, when an athlete's close friend (*high closeness*) receives an honor (*good performance*) in *arts* (*low relevance*), the athlete is most likely to feel happy and proud of having this friend (*a positive self-evaluation*). However, when an athlete's close friend (*high closeness*) receives an honor (*good performance*) in *sports* (*high relevance*), the athlete is more likely to feel competitive and threatened of having this friend (*a negative self-evaluation*).

However, the original SEM examines how different levels of *relevance* (high versus low) affect individuals' self-evaluation through comparing with another person with only fixed levels of *high closeness* and *high-performance quality*. SEM does not directly suggest how individuals' self-evaluation is affected by different combinations of the three factors at all levels: the *closeness* of the other (high versus low), the *quality* of the other's performance (high versus low), and the *relevance* of that performance (high versus low).

In order to predict how an individual will respond to a stingy donor, I extend SEM in accordance with *the three factors*. I apply them to the same simplified charitable giving context, consisting of an individual (the self) and a stingy donor (the other) only. This extended version of SEM also starts with the same assumption that an individual strives for achieving optimal self-evaluation through comparing with the other. In addition, it also assumes that the individual may perform in a way to "feel better than" the other in comparison, if it is not too difficult or costly. Thus, the extended version of SEM helps to predict two things: how an individual would identify self-generosity

through comparing with the other donor (e.g. “Am I more generous or stingy than the other donor?”), and how an individual would behave to avoid possible negative feelings from the comparison (e.g. “Should I give more than the stingy donor?”).

In order to develop an extension on SEM to make predictions on how an individual would behave in a charitable giving context with the other donor giving stingily, I first examine three factors in this context. The first factor, *psychological feeling of closeness*, is usually measured through social distance in social psychology, and research suggests that interpersonal similarity is one key social distance dimension (Liviatan et al., 2008; Stephan, Liberman, & Trope, 2011). In addition, scholars often use “psychological similarity” and “closeness” interchangeably (Tesser & Campbell, 1980). Thus, it is reasonable to use psychological similarity as a proxy for psychological closeness for the purpose of generating hypotheses.

The second factor, the *quality of the other’s performance*, is usually perceived either as “good” or “bad” by the individual in a comparison process. In the simplified charitable giving context, a stingy donor’s behavior may be perceived as “less good,” because it is better than giving nothing but worse than giving generously.

The third factor, the *relevance of other’s performance*, could be high when the individual evaluates their own generosity by comparing with the stingy donor. However, the *relevance of other’s performance* could be low when the individual’s self-evaluation of generosity is not affected by the stingy donor’s giving.

Thus, in this simplified charitable giving context: (1) the *psychological closeness* represented by psychological similarity would be moderately high when the stingy donor is perceived as moderately similar and it would be very high when the stingy donor is

perceived as highly similar; (2) the *quality of a stingy donor's behavior* would be perceived as “less good;” and (3) the *relevance of a stingy donor's behavior* would be high when an individual cares about being generous (e.g. high empathy individuals). However, the *relevance* would be low when an individual does not care about being generous (e.g. narcissistic individuals). If the *relevance* is low, an individual's behavior is unlikely to be affected by the other donor's performance (no social influence). Therefore, in order to examine the joint effect of similarity and social influence, I apply the extended version of SEM to the simplified charitable giving context assuming *relevance* is high; that is assuming that an individual will be affected by the other's giving in identifying the self-generosity. I make this assumption based on research showing that the number one reason people report for volunteering and donating money is altruism (Clary, Snyder, & Ridge, 1992; Konrath & Handy, 2017).

Specifically, in this simplified charitable giving context, the individual attempts to judge one's own generosity by comparing to the other donor who has given stingily (*high relevance of the other's performance*). An individual's self-evaluation of generosity may be threatened by a stingy donor if the stingy donor has given more than the self (*good performance of the other*). The higher the self-other similarity (*psychological similarity*), the stronger the feeling of threat (*negative self-evaluation*). Thus, in order to avoid this feeling of threat, the individual may give a higher amount than the stingy donor does, and the individual may want to give more when the stingy donor is perceived as more similar. Thus, I make the following predictions based upon the extended version of SEM in the simplified charitable giving context:

Extension of SEM Prediction I: An individual will give a slightly higher amount than a stingy donor, because giving more can enhance an individual's self-evaluation of generosity.

Extension of SEM Prediction II: If a stingy donor with high similarity creates a strong feeling of threat, an individual will give a much higher amount than the stingy donor has given, in order to avoid this feeling.

Social Proof Theory suggest that in an ambiguous social situation, individuals may assume that others in that same situation possess more knowledge, and thus they may be more likely to follow others' behavior (Cialdini, 2001b). Social Proof has been identified by Robert Cialdini as one of the six principles of persuasion in charitable giving, which suggests that people are more likely to donate if the comparable others have donated before them (Cialdini, 2001a). The key mechanism of Social Proof is presumption about the accuracy of others' opinions and behaviors. In other words, Social Proof processes are most likely to occur when people assume others are more knowledgeable and accurate than them, thus following what others do. However, if others' behavior is perceived as suspicious or unreasonable, people are less likely to follow others. For example, in field experiments of fundraising for a public radio station, individuals donated more when they were told that similar others donated a moderately high amount (e.g. \$300), than when they were told that similar others donated a lesser amount (e.g. \$75) (Shang & Croson, 2009). However, individuals donated much less when they were told similar others donated a very high amount (e.g. \$1000) (Croson & Shang, 2013). Empirical evidence suggests that Social Proof is more likely to occur when others share some commonalities with individuals, such as geographic locations (e.g.

residents, see Reingen, 1982), demographic characteristics (e.g. gender, see Shang, Reed, & Croson, 2008) or memberships (e.g. actual membership, see Shang, Reed, & Croson, 2008; and induced membership, see Fischbacher, Gächter, & Fehr, 2001). In order to predict how an individual may respond to a stingy donor based upon *Social Proof*, I apply it to the same simplified charitable giving context:

Social Proof Prediction: An individual is most likely to assimilate a stingy donor's behavior to give stingily if they assume that this behavior is reasonable in an ambiguous situation. The higher the similarity between donors, the higher the tendency will be for an individual to make this assumption and thus follow the stingy donor to give stingily.

Summary of Theoretical Predictions

These theoretical frameworks and concepts provide mixed predictions on how an individual would respond to a stingy donor's giving at different levels of similarity between the self and the stingy donor. Specifically, *Self-Other Oversimilarity Hypothesis* predicts a *curvilinear* (U-shaped) *donor-donor similarity influence* in the presence of a stingy donor. In other words, an individual is more likely to give stingily (assimilate the stingy donor's behavior) when this stingy donor is perceived moderately similar to the self. However, an individual is more likely to give generously (contrast to the stingy donor's behavior) when this stingy donor is perceived as highly similar. Social Comparison Theory predicts a *downward positive donor-donor similarity influence* in the presence of a stingy donor; that is, an individual is more likely to follow a stingy donor to give stingily as long as the increasing similarity between the stingy donor and the self leads to more attraction. Self-Evaluation Maintenance Model predicts an *upward*

negative donor-donor similarity influence in the presence of a stingy donor; that is, an individual is more likely to give a higher amount than a stingy donor has given (in contrast the stingy donor's behavior). In addition, Self-Evaluation Maintenance Model also suggests that an individual's tendency to give a higher amount will be strengthened as similarity increases because high similarity would generate a strong feeling of threat. Social Proof predicts a *downward positive donor-donor similarity influence* in the presence of a stingy donor; that is, an individual is more likely to give stingily in the presence of a stingy donor based upon the assumption that this is a reasonable way to behave in this given situation. The individual's tendency to make this assumption increases as the similarity level increases. Therefore, in order to better understand the different mechanisms behind the joint effect of similarity and social influence, it is important to design a study to further investigate this issue.

Method

Participants and Design

This proposed research will utilize the same experimental procedure as in Chapter 3 to investigate whether and how self-other similarity affects individuals' charitable giving in the presence of a *stingy* donor. Specifically, this study will use a between-subject design on a college student sample using facial morphing to create different levels of self-other similarity in three conditions (*Low, Moderate, High Similarity*). There are a few aspects in this proposed research that differ from the experimental procedure in Chapter 3. The first difference is that in Chapter 3, the donation amount from a generous donor is 80% of the study payment, whereas the donation amount from a stingy donor will be 20% in this proposed study.

Secondly, in addition to testing predictions from *Self-Other Oversimilarity Hypothesis*, I will add a few new measures to test alternative predictions discussed in the previous section. The questionnaires used in Chapter 3 include measures such as *individuals' charitable giving, facial recognition, similarity, liking and attraction, beliefs about donation impact, previous familiarity with the recipient organization, social desirability*, and some *demographic measures* (e.g. gender, age, ethnicity). In addition, I will add measures in the online task *after* an individual makes the giving decision online, including: *evaluation of one's own generosity, evaluation of the other donor's generosity, evaluation of other's importance to the self, perceived "right" amount to give (e.g. what people ought to give in this given situation), and perceived need (e.g. how much is needed in this situation)*.

Power Analysis. In order to determine the sample size needed in this study, I used G*Power 3.1 software to conduct power analysis with $\alpha = .05$. To detect difference of a conservative effect size at the medium level ($f=0.25$) between four conditions with a power of 0.80 and possible moderators, I would need a total sample size of 250 participants. Therefore, a final sample of 260 participants is sufficiently powered to detect small-to-medium effect sizes with four covariates.

Data Analysis Plan

For the *manipulation check*, I will run an ANOVA and post-hoc comparisons of similarity across the experimental conditions (*Low, Moderate, High Similarity*). A successful manipulation will be expected with significant differences in similarity across the conditions.

For the *randomization* check, I will run ANOVAs and post-hoc comparisons on all possible covariates across experimental conditions. These variables include: facial recognition, previous familiarity of the recipient organization, social desirability, some demographic measures (e.g. gender, age, ethnicity), and the perceived “right” amount to give. A successful manipulation will be expected with non-significant differences in these variables across conditions.

For the *main analysis*, I will run binominal Logit regressions on participants’ decisions to donate (e.g. whether participants donated or not) across experimental conditions, and run ANOVAs of percentage donated across experimental conditions. In addition, I will add covariates in both models to check the robustness of the results.

For the possible *mediators*, I will run ANOVAs on the following variables: *beliefs about donation impact, liking and attraction, evaluation of self-generosity, evaluation of the other donor’s generosity, perceived “right” amount to give, and perceived need*. If the pattern between any of these variables and similarity looks similar to the pattern between similarity and individuals’ charitable giving, this variable may be a potential mediator. Then, I will do the mediation analysis on any identified potential mediators.

For the possible *moderator* check, I will add interaction terms into the statistical analysis regression models to see whether the coefficients from these quadratic terms are significant. Variables with significant coefficients on quadratic terms are potential moderators in the relationship between similarity and charitable giving. After identifying these, I will unpack them using standard statistical procedures for interpreting interactions (Aiken, West, & Reno, 1991).

Projected Findings

I report the projected findings of individuals' charitable giving in the presence of a stingy donor based upon different theoretical frameworks below (See Table 4-1).

Table 4-1

[Projected Findings]

Implications

This proposed study has implications for both theory and practice. Theoretically, it will investigate different mechanisms in the role of self-other similarity on individuals' charitable giving in the presence of a stingy donor. Since little is known about what could occur, and theoretical frameworks and concepts provided mixed predications about how individuals could behave, it is important to investigate different mechanisms developed from relevant theories on how an individual would behave in the presence of a stingy donor. However, these predictions are still unclear under certain conditions. For example, *Social Comparison Theory* does not clearly suggest what could occur if a stingy donor is not attractive or salient. In other words, it is unclear whether giving from an unattractive or non-salient stingy donor will either negatively affect or not affect an individual's own giving. Thus, more evidence is needed regarding these unclear predictions. In addition, it will also provide important implications to nonprofit practitioners in a fundraising context based upon new empirical evidence of individuals' responses to a stingy donor's giving at different levels of self-other similarity.

Additional studies are still needed to better understand the role of similarity in different contexts that extend beyond a two-person scenario and for different types of perceived similarities. Specifically, how does self-other similarity affect individuals'

charitable giving in a group context (e.g. a fundraising event)? Does the effect of similarity on charitable giving remain when using different types of similarity, such as attitudinal similarity (e.g. opinions and values), demographic similarity (e.g. gender, race, and ethnicity), coincidental similarity (e.g. birthdate, fingerprints, and surnames)?

Table 4-1: Projected Findings

Relevant Theories	Projected Donor-Donor Similarity Influence on Individuals' Charitable Giving	Mechanisms	Possible Moderators/Mediators
Optimal Distinctiveness Theory	Individuals give the lowest amount and are least likely to give at the moderate similarity condition and give higher amount in both low similarity and high similarity conditions	Two competing needs: Assimilation and differentiation	Belief about donation impact, and perceived need
Social Comparison Theory	Individuals give less and are less likely to give when similarity increases	Attraction and salience of the stingy donor	Liking and attraction, salience of the stingy donor
Self-Evaluation Maintenance Model	Individuals give more and are more likely to give when similarity increases	Closeness of the stingy donor, the quality of the stingy donor's performance and the relevance of the stingy donor's performance	Evaluation of self-generosity, evaluation of the other stingy donor's generosity
Social Proof	Individuals give less and are less likely to give when similarity increases	Perception of reasonableness and accuracy of a stingy donor's behavior in an ambiguous situation	The difference between perceived "accurate" amount to give, and the stingy donor's giving amount

Appendices

Appendix 1: Coding Criteria on Self-Other Similarity Levels

Key terms

Identity

In psychology, identity refers to the capacity for self-reflection and the awareness of self (Leary & Tangney 2003, p.3). Identity may be shaped by qualities, beliefs, personality, expressions, etc.

Characteristic

One specific aspect of identity, such as gender, race, religion, ethnicity, and occupation.

Importance of Shared Identity

(1) whether the shared identity is the possible recipient of the donation. e.g. students donate to the funds supporting students, or, ice skiers donate to the fund for ice track maintenance. (2) whether the shared identity strongly affects the decision making in prosocial behavior. e.g. group donation to a public fund. In this situation, each group member's giving strategy depends upon another one's giving strategy.

Self-Other Overlap

A psychological state in which a person sees another person (or group of people) as being included in their sense of self or identities. This involves a feeling of merging or oneness with the other(s), and at times, incorporations of others' actions, reactions, and subjective

meanings within one's own. There can be self-other overlap in one's resources, perspectives, or characteristics.

"includes the other in the self" "the Inclusion of others in self (IOS)" (Aron & Aron, 1986, 1996, 1997)

"the other is treated as self or confused with self" (Aron et al. 1991, p.242)

"Incorporation of [the other's] actions and reactions...into the content of one's various conceptions of the self" (McCall, 1974, p.219)

"feeling of oneness" (French and Raven, 1959, p.161)

"living in each other's subjective contexts of meaning" (Schutz, 1970, p.167)

"Self-other merging," "overlap between the representations of self and other," "inclusion of others' characteristics within the self," "a merging of mental constructs representing self and other" (Davis, Conklin, Smith & Luce, 1996, p.714)

"Three different kinds of self-other merging: merging of resources, perspectives, and characteristics" (Aron et al. 1991).

Coding Protocol

No similarity

The participant and the other donor/helper do not share any common characteristics of a shared identity.

OR, the participant and the other donor/helper *do* share some common characteristics of a shared identity, but the participant is not aware of it.

Note that importance of shared identity is not applicable, because there is no shared identity.

AND, no information on the overlap with other donor/helper of perspectives and resources.

E.g. The participant is a college student. Another donor is a professional worker.

Participant is not provided with any information regarding the common characteristics of a shared identity and there is no overlap of perspectives and resources.

Low similarity

The participant and the other donor/helper share some common characteristics that lead to a shared identity.

AND, the participant is aware of this shared identity, either because they already have this information in mind, or because it is given to them in the experiment.

OR, the importance of that specific identity is low.

AND, the shared identity does not imply the overlap with other donor/helper of perspective.

And, no information on the overlap with other donor/helper of resources.

E.g. A generic overlapping identity category. For example, the participant and the other donor/helper are both students. Note that the generic category “students” includes a number of common characteristics (e.g. same age, same school, etc.), but has one overarching generic identity category. The shared identity does not imply the overlap of perspectives. No additional information is given about the other donor/helper of the resource overlap.

Moderate similarity

The participant and the other donor/helper share one or more identities.

AND, the participant is aware of these shared identities, either because they already have this information in mind, or because it is given to them in the experiment.

OR, the importance of at least one of those specific identities is high.

Identities that are temporarily primed (situationally activated) in an experimental design are by default considered high importance. E.g. “Imagine you are an NPR member.”

The shared identities do not imply that the participant and the other donor/helper psychologically overlap with each other.

AND, at least one important shared identity implies the overlap with other donor/helper of perspective.

AND, no information on the overlap with other donor/helper of resources.

E.g. Two generic overlapping identity categories. For example, the participant and the other donor/helper are both female AND both NPR members. The NPR membership imply their supports to the national public radio station, which implies the overlap of perspectives. No additional information is given about the other donor/helper of the resource overlap.

High similarity

The participant and the other donor/helper share more than one identity.

AND, the participant is aware of these shared identities, either because they already have this information in mind, or because it is given to them in the experiment.

OR, the importance of at least one of those specific identities is high.

Identities that are temporarily primed (situationally activated) in an experimental design are by default considered high importance. E.g. “Imagine you are an NPR member.”

The shared identities imply that the participant have the overlap of perspectives.

AND, overlap with others of resources.

E.g. “Imagine you are a taxpayer.” Government spending tax, and tax payers. The overlap of resources and perspectives to support the same public goods. Another case is the couples as donors. Their shared identity is family member and resource allocator. They share perspectives and resources.

	Awareness of Shared Identity	Number of Shared Identities	Importance of Shared Identity	Self-Other Overlap
<i>No Similarity</i>	No	No OR Maybe	N/A	No
<i>Low Similarity</i>	Yes for shared identity OR Yes for Mismatched identity	1	Low for shared identity OR High for Mismatched identity	No
<i>Moderate Similarity</i>	Yes	1 or more	High	No
<i>High Similarity</i>	Yes	More than 1	High	Yes

Additional notes:

Consider the word “overlap” instead of substitutable. Because it is easier to quantify a degree of overlap (as we do in our experiment) than to quantify when something is substitutable or not.

Something important is happening when the other donor / helper is seen as “not me” versus when that person starts to be seen as part of “me.”

Appendix 2: Excluded Potential Eligible Articles with Reasons

APA Citation	Database	Reasons for Exclusion	Exclusion Notes
Andreoni, J. (1993)	Backward and forward search	crowding out literature	crowding out literature
Andreoni, J., & Scholz, J. K. (1998)	EBSCO, ProQuest	no similarity comparison	moderate only
Becchetti, L., Pelligra, V., & Reggiani, T. (2017)	Web of Science	similarity cannot be determined	no information about the other donor
Croson, R., Handy, F., & Shang, J. (2009)	PsychINFO, Web of Science	no similarity comparison	
Czap, H. J., & Czap, N. V. (2011)	Backward and forward search	not about similarity	leader giving
Dannenberg, A. (2015)	EBSCO, ProQuest	not about similarity	leader giving
Ebeling, F., Feldhaus, C., & Fendrich, J. (2017)	Web of Science	not about similarity	social class
Eckel, C. C., Grossman, P. J., & Johnston, R. M. (2005)	Backward and forward search	crowding out literature	crowding out literature
Falk, A., Fischbacher, U., & Gächter, S. (2002)	Backward and forward search	no similarity comparison	only moderate
Farrow, H., & Yuan, Y. C. (2011)	Web of Science	not about similarity	social ties
Gong, X., & Sanfey, A. G. (2017)	ProQuest	not about similarity	social rank
Huang, Y. (2016)	PsychINFO, EBSCO, ProQuest, Web of Science	not charitable giving	only measure life satisfaction
Jackson, K. (2016)	EBSCO, ProQuest, Web of Science	no similarity comparison	donor's giving is different but the similarity is the same
Kaikati, A. M., Torelli, C. J., Winterich, K. P., & Rodas, M. A. (2017)	PsychINFO, EBSCO, Web of Science	not donor-donor similarity	donor-recipient similarity
Kamas, L., Preston, A., & Baum, S. (2008)	EBSCO	not independent giving	joint giving decision
Katz, H., & Malul, M. (2015)	ProQuest	not about similarity	no information about the other donor
Kvaran, T. H. (2012)	PsychINFO	similarity cannot be determined	social norm and no information about others. dissertation

Meer, J. (2011)	Web of Science	not donor-donor similarity	donor-solicitor similarity
Partika, A. C. (2017)	PsycoINFO, EBSCO	not donor-donor similarity	average donation amount is given
Qu, H., & Steinberg, R. (2017)	EBSCO, Web of Science	not social influence	membership identity and giving
Raihani, N. J., & McAuliffe, K. (2014)	ProQuest	no similarity comparison	donor's giving is different but the similarity is the same
Samek, A. S., & Sheremeta, R. M. (2014)	ProQuest	no similarity comparison	donor's giving is different but the similarity is the same
Samek, A. S., & Sheremeta, R. M. (2014)	Web of Science	no similarity comparison	donor's giving is different but the similarity is the same
Sanders, M. (2017)	PsychINFO	no similarity comparison	only one level, the peers in the workplace
Smith, S., Windmeijer, F., & Wright, E. (2012)	Backward and forward search	similarity cannot be determined	not enough information about others
Wei, Z., Zhao, Z., & Zheng, Y. (2017)	Web of Science	no similarity comparison	all other people are group members. The study tested the social influence of generosity and stinginess
Wiepking, P., & Heijnen, M. (2011)	PsychINFO	similarity cannot be coded	not enough information about others

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Curriculum Vitae

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Education

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- 2008-2010 **M.A., Public Administration:** China University of Political Science and Law, School of Political Science and Public Administration; Beijing, China
- 2004-2008 **B.A., Nonprofit Management:** China University of Political Science and Law, School of Political Science and Public Administration; Beijing, China

Academic Employment

- 2010-2018 **Graduate Research Assistant** (Dr. Dwight Burlingame, Dr. Angela Bies, and Dr. Sara Konrath), Lilly Family School of Philanthropy, Indiana University
- 2013-2018 **Adjunct Instructor**, Philanthropic Studies Undergraduate Program, Beijing Normal University, Zhuhai, China
- 2017 Summer **Research Fellow** (Sasha Zarins and Dr. Una Osili), Research Department, Lilly Family School of Philanthropy, Indiana University
- 2012-2015 **Ford and Luce Foundations Research Fellow**, Lilly Family School of Philanthropy, Indiana University
- 2008-2010 **Graduate Research Assistant**, School of Political Science and Public Administration, China University of Political Science and Law, Beijing, China

Honors and Awards

- 2018 SPSP Student Poster Award Competition Finalist
- 2017 ARNOVA Doctoral Fellowship Seminar I (Proposal Defensed)
- 2017 Penn Summer Social Impact Doctoral Fellowship
- 2017 Mentor research grant with Dr. Sara Konrath from Undergraduate Research Opportunity Program (UROP)
- 2016 David Jacobs Fellowship
- 2012-2017 Lilly Family School of Philanthropy Travel Grants
- 2016 Harriet Ivey Capstone Award
- 2012&2016&2017 Graduate Professional Student Government Travel Award
- 2014&2015 ARNOVA Diversity Scholars and Leaders Award
- 2014 ISTR Ph.D. Seminar Scholarship
- 2012&2013 ARNOVA Travel Grants

Publications

- Konrath, S. & Tian, Y. (2018) *Narcissism and prosocial behavior*. Hermann, T., Brunell, A., & Foster, J. (Eds.) *Handbook of Trait Narcissism: Key Advances, Research Methods, and Controversies*. New York: Springer. (Peer-reviewed Chapter).

Working Papers

- Tian Y. & Konrath S. (2018), The effects of similarity on charitable giving in donor-donor dyads: A systematic literature review. *Voluntas* (Under review).
- Tian Y. & Konrath S. (2018), Can too much similarity to self backfire? The effects of different levels of similarity on charitable donations.
- Tian Y., Frumkin P. & Hung C.K. (2018), Do corporate social responsibility programs in different domains matter? A lab experiment to investigate the effects of corporate social responsibility on customers' actual purchase behavior.
- Tian Y., Hung C.K. & Frumkin P. (2018), Breaking a starvation cycle of nonprofit overhead: what information donors need to know?

Conference Posters and Talks

*undergraduate student co-presenters starred

- Tian Y., Hung, C. & Frumpkin P., *Is Overhead Ratio Aversion Changeable? A Lab Experiment*, American Society for Public Administration (ASPA), Denver, March 2018.
- Tian Y. & Konrath S., *Charitable Giving and Social Influence: A Lab Experiment on Donor Similarity*, Society for Personality and Social Psychology (SPSP), Annual Convention, Atlanta, March 2018.
- Tian Y. & Konrath S., *The Association between Volunteering with Personal Well-being, Prosocial Tendencies, and Antisocial Tendencies in Post-Millennial Adolescents*. Association for Research on Nonprofit Organizations and Voluntary Action (ARNOVA) Conference. Grand Rapids, November 2017.
- Tian Y., *How Are Giving Behaviors Affected by Other Givers? A Lab Experiment Testing Self-Other Oversimilarity Theory*. Science of Philanthropy Initiative (SPI) Conference. Chicago, September 2017.
- Hakeem, A.*, Hauer, C.*, Konrath, S., Lai, T.*, Taylor, T.*, Tian, Y., Tutrow, K*. & Ustymchuk, N. **How People Are Affected by Other Charitable Giving*. Poster presented at IUPUI Research Day; Indiana; April 2017. ~Note: Presenters order is alphabetized to reflect equal conference poster contributions.
- Tian Y. & Konrath S., *How People React to Other's Giving at Different Donor-Donor Similarity Levels: Positively, Negatively or Curvilinear? –New Evidence from Lab Experiment*. Association for Research on Nonprofit Organizations and Voluntary Action (ARNOVA) Conference. Washington, D.C., November 2016.

- Tian Y. *Interdisciplinary Literature Review on Social Information Influence on Charitable Giving*. ARNOVA Roundtable Discussion. Washington, D.C., November 2016.
- Steinberg R., Duffy B., Tian Y. & Hansen R., *Income, Wealth, and Generosity in the U.S. Philanthropy Panel Study*. Paper presented at Association for Research on Nonprofit Organizations and Voluntary Action (ARNOVA) Conference. Chicago, IL, November 2015.
- Bies A. & Tian Y., *Chinese Foundations: Institutional Factors, Funding Behavior & Future Capacity*, Paper presented at Association for Research on Nonprofit Organizations and Voluntary Action (ARNOVA) Conference. Chicago, IL, November 2015.
- Tian Y., *Field Experiments: The Impact of Social Information in Charitable Giving Solicitation*. Paper presented at Association for Research on Nonprofit Organizations and Voluntary Action (ARNOVA) Conference. Denver, CO, November 2014.
- Tian Y., Stenberg R. & Bies A., *Donors Like You or Recipient Like You?* Paper presented at Association for Research on Nonprofit Organizations and Voluntary Action (ARNOVA) Conference. Denver, CO, November 2014.
- Bies A. & Tian Y., *Chinese Foundations in Comparative Perspective: Characteristics & Future Capacity*. Paper presented at China Philanthropy Summit. Indianapolis, IN, July 2014.

- Tian Y & Una O., *An Empirical Test of Strategic Giving of Million Dollar Gifts*.

Paper presented at Association for Research on Nonprofit Organizations and Voluntary Action (ARNOVA) Conference. Hartford, CT, November 2013.

Professional Development

- 2017 May R Statistics Bootcamp at Indiana University, Bloomington
- 2017 May Meta-Analysis Workshop at Kent State University
- 2011-2012 Excel Basics and Advanced Workshops at Indiana University - Purdue University Indianapolis